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SOUTHERN GULF ISLANDS HARBOURS COMMISSION

Notice of a meeting on **Friday, August 26, 2016** at 9 am
Saanich Peninsula Health Unit, 2170 Mt. Newton X Road, Saanichton, BC

D. Hargreaves, N. Pender Island
C. Bunnin, Mayne Island
B. Young, Piers Island
B. Mabberley, Galiano Island

L. Peck, Saturna Island
R. Fenton, S. Pender Island
D. Howe, SGI EA Director

AGENDA

1. Approval of the Agenda
2. Adoption of the Minutes of the Meeting held May 27, 2016
3. Chair's Remarks
4. Presentations/Delegations
 - No one has registered to speak.
5. Correspondence
6. Southern Gulf Islands Harbours Commission 2016 Improvements Project – Award of Construction Contracts 2016-170, 2016-171, and 2016-172 (Report #SGIHC 2016-06)
7. Southern Gulf Islands Harbours Commission – Float Ladder Installation Project (Report #SGIHC 2016-07)
8. Vehicle Load Capacity Analysis for the Miners Bay, Hope Bay, Port Washington, and Sturdies Bay Docks (Report #SGIHC 2016-05)
9. Operating Budget Update
10. Dock Reports
 - July 2016 Dock Inspections
 - Galiano Island
 - Saturna Island
 - Mayne Island
 - North Pender
 - South Pender
 - Piers Island
 - Swartz Bay
11. Adjournment



Making a difference...together

**Minutes of a Meeting of the Southern Gulf Islands Harbours Commission
Held May 27, 2016 at the Saanich Peninsula Health Unit, Mt. Newton X Road,
Victoria, BC**

- PRESENT:** Commission: B. Maberley, Galiano Island; C Bunnin, Mayne Is; B. Young, Piers Is.; R. Fenton, S. Pender Island; D. Hargreaves, N. Pender Island; D. Howe, Regional Director
Staff: Ted Robbins, General Manager, Integrated Water Services;; Ian Sander, Capital Projects Manager; Peggy Dayton, Sr. Financial Analyst; M. Brown (recorder); Al Cannon
- ABSENT:** L. Peck, Saturna Island; Dan Robson, Manager, Saanich Peninsula and Gulf Islands Operations
- PUBLIC:** 4

The meeting was called to order at 9:00 am. B. Maberley, Chair.

1. Approval of Agenda

MOVED by Robert Hargreaves, **SECONDED** by Carl Bunnin, that the agenda be approved with the following changes: Change Item 9 to read New Business and include the following: a) discussion on BC Ferries; b) ladders; c) dinghy dock at Miners Bay; and d) information on response to qualification call.

CARRIED

2. Adoption of Minutes

MOVED by Carl Bunnin **SECONDED** by Dave Hargreaves that the minutes of the April 22, 2016 meeting be adopted as amended. Item 14, North Pender. Change last sentence to read "Someone tripped over wooden blocks and the problem was solved with a yellow bollard." CARRIED

3. Chair's Remarks - The Chair welcomed everyone.

Ben reported on his attendance at an oil spill response workshop held in anticipation of oil pipeline approvals and increased shipping in the area. Discussion ensued on the SGIHC being included in the talks for the development of these plans.

4. Presentations/Delegations

Mr. T Snelgrove – re Mayne Island docks

Copies of his presentation were handed out to the commissioners. Mr. Snelgrove reviewed his report noting his concerns for basic repairs and maintenance, lack of community leadership and community concerns regarding the Miners Bay and Horton Bay docks.

Commission members discussed the presentation and explained the changes underway with the maintenance process of keeping CRD docks repaired through budgeted and scheduled work plans and an approved procurement process. It was noted that Al Cannon is the dock co-ordinator for the SGIHC dock facilities. Carl Bunnin reviewed his Mayne Island public consultations and articles.

5. 2016 Capital Improvements Update

Ian Sander reviewed the RFP project schedule and also noted that the December 18 report is on the CRD's SGIHC web page. Tender packages have to be out between July and August. Work will be co-ordinated with DFO.

Ted Robbins reported on the response to the qualification call and stated that three responses met the minimum CRD requirements.

6. Operating Budget Update

Commissioners reviewed the R&E summary provided and noted the addition of the percentage remaining column. An additional request for information on assets and liabilities was made.

7. Lyall Harbour Dock Divestiture

Ben Maberley reported that the Lyall Harbour Dock divestiture has been turned over to Public Works and, further, that core and non-core docks are being reviewed. Non-core docks will be entered into the divestiture program.

Discussion ensued on the potential to use the Pender Island CBSA dock during the off season. A review of past efforts in this regard was given.

MOVED by Robert Fenton, **SECONDED** by Dave Hargreaves that the SGIHC authorizes CRD staff to work with the commission to give support to obtaining some rights for use of the CBSA dock on South Pender Island and authorizes Director Howe to take any necessary steps in this regard. CARRIED

8. Dock Reports

A copy of Al Cannon's March 8, 2016 dock report was included in the agenda package.

Galiano Island – Al stated that a derelict drum had been removed, some painting done but no approval received for flotation problem at the airplane float

Saturna Island – No structural problems. Kayak float is finished and is physically attached to the float although the intent was for it to be a moored vessel. Wharfinger requested non-skid on gangway.

Mayne Island – Al noted that the bedding for the gangway mooring needs to be done as well as some painting at Miners Bay. Horton Bay has not received any authorization. Carl noted that one of the anchors had dragged and divers had tightened up the chains.

Discussion ensued on removal of the fuel tanks and Ted offered to investigate to see if someone is responsible or if there is a Statute of Limitations in the agreement.

Al reported that \$8,000 for work at Miners Bay had been approved and will be done by Island Marine.

North Pender – Problem with gangway roller bearings. Sliding aprons have been approved. Problem with deck boards curling upward. C float is in bad shape. The problem of dock access was discussed and a legal easement was considered critical. Ted agreed to follow up on this item as to whether or not a legal public access was

granted. It was noted that the water lease and dock are out of alignment and Ted agreed to follow up on this item.

South Pender – Nothing to report

Port Washington – One of the chains may be dragging as one of the floats is out by 20 degrees. Gangway mesh needs replacing. Notice boards are starting to rot.

Hope Bay crane – Does the commission want to spend money to fix it? It was noted that all crane operators need to be certified. Commission members noted it would be an asset to have an operator on the island. Ted stated that Peter could attend a CRD operators course. Al agreed to obtain an assessment of the cost to fix the crane.

Piers Island Swartz Bay – Al reported receiving a quote from Mike re pressure washing and replacing of deck board as well as renailling decking at Swartz Bay. Strips around the pilings need replacing.

Swartz Bay loading zone painted. Bearings are gone on the gangway and floats need pressure washing. Discussion ensued on the BC Ambulance Service requests and it was agreed that Dan and Al talk to them regarding cost sharing. Commission members agreed that they provide an essential service for the islands.

9. New Business

- a) BC Ferries –Commission members discussed the possibility of collecting a toll on commercial vehicles using the ferries to raise funds to remediate damage done by ferry wash to SGI dock facilities. Further discussion noted previous appeals to BC Ferries to reduce wash. Damage by wash to the foreshore was also noted.

MOVED by Robert Fenton, **SECONDED** by Director Howe that the Commission and CRD prepare a formal presentation to advise that we are having this discussion and request as soon as possible that funding be made available or changes made in behavior to protect the SGIHC dock facilities in Active Pass. CARRIED

- b) Ladders – Ben reviewed work done by Small Craft Harbours and WCB re development of ladders. Ian agreed to speak to Dan re the status of this issue.

- c) Miners Bay dinghy dock – Ian Dow stated that they are requesting 30 ft of dock. Commission members discussed the problems and their concern about adding to that facility. Carl agreed to obtain a price for the dock.

- d) Response to qualification call – dealt with in item #5.

10. Adjournment

MOVED by Director Howe, **SECONDED** by Dave Hargreaves, that the meeting be adjourned at 11:50 am. CARRIED

Agenda Item 5

August 21, 2016

Re Miners Bay Dock

Dear Ted, Dan and Harbours Commission Members,

I would like the Harbours Commission members and certain CRD staff to be aware of our predicament concerning certain floats at Miners Bay dock.

On August 11th, while Carl Bunnin and I were working with Island Marine Construction workers at the dock, we experienced the worst series of ferry produced waves I have ever seen. The floats were rolling so badly one could not stand without holding on to two boats that were moored here. While trying to keep our balance we held the boats away, to keep them from pounding against the dock. If any unaware person had been there at the time, I hesitate to think of the consequences.

As a consequence of the BC Ferries transiting Active Pass, and the large wake that their 'Spirit' class of ferries produces, we are constantly having to monitor and carry out frequent repairs to the floats and one of the gangways. It is not only the time and associated costs this has become a serious safety issue.

I had dealt with this problem during my years as Ports Manager, and it appears things are as bad if not worse than at that time. During the early 2000's I had met with the BC Ferries captain of Swartz Bay terminal, and he did agree to slow certain vessels during periods of high tides and winds with a northerly component. This lasted only one summer, and they then resumed their normal speed.

The following is a short list of the repairs we have had to carry out during the last month.

Three times since July 18th, the gangway has been knocked right off its bed, and only heavy chains have prevented it from going right off the float. The gangway, after this happens, is at a very dangerous tilt and angle for anyone wishing to use it.

Three times this summer Island Marine Construction, of Salt Spring Island have attempted to adjust all the anchoring chains attached to the three northern floats. They have attended at different tide levels in an attempt to reduce as much movement and swinging of the floats as possible.

BC Ferries has stated that they require a certain speed to maintain rudder control while transiting around Mary Anne Point, on Galiano Island. In the last few days I have monitored this class of ferry actually slow down in the pass, in order for the north bound and south bound vessels to meet close to Georgeson Bay, for safety reasons. In one case the southbound ferry came to a complete stop due to an intervening sailboat. In these cases, the resulting ferry wake was almost negligible.

At certain times there are twenty-five or more people on these floats, waiting for water taxis or purchasing fish who are unaware of this problem. I would strongly recommend that CRD initiate communications with BC Ferries with a view to having the 'Spirit' class ferries reduce their speed in Active Pass during higher tides and/or northerly winds.

Thank you,

Al Cannon

Dock Operations Coordinator.



**REPORT TO THE SOUTHERN GULF ISLANDS HARBOURS COMMISSION
MEETING OF FRIDAY, AUGUST 26, 2016**

**SUBJECT SOUTHERN GULF ISLANDS HARBOURS COMMISSION 2016
IMPROVEMENTS PROJECT– AWARD OF CONSTRUCTION CONTRACTS
2016-170, 2016-171, AND 2016-172**

ISSUE

The purpose of this report is to seek the Southern Gulf Islands Harbours Commission (SGIHC) approval to award the construction contracts for the:

1. 2016 Improvements for Retreat Cove, Montague Harbour, Sturdies Bay (Galiano Island) and Miners Bay (Mayne Island) Contract No. 2016-170;
2. 2016 Improvements for Piers Island and Swartz Bay Contract No. 2016-171; and
3. 2016 Improvements for Port Washington, Hope Bay, and Port Browning (Pender Island) Contract No. 2016-172.

BACKGROUND

At their November 25, 2015 meeting, the SGIHC approved the 2016-2020 5-Year Capital Plan which defined yearly capital expenditures for the dock facilities under the service’s responsibility. The 2016 Improvements Project (Project) includes works recommended to be completed in the first year of the 5 – year program. In summary, the Project includes works at all 9 of the Capital Regional District (CRD) owned facilities with a total approved budget in 2016 of \$526,150, which will be funded entirely from the Southern Gulf Islands Harbours Service Capital Reserve Fund.

At their April 22, 2016 meeting the SGIHC approved retaining Moffatt & Nichol (M&N) to provide engineering services, contract preparation and construction administration services for the Project. A copy of the April 22, 2016 staff report has been included as **Attachment 1**. M&N completed the detailed design for the Project and recommended that work be divided into three separate work packages. This recommendation was based on geography (combination of adjacent facilities to minimize mobilization costs) and appropriately sized projects to allow for both medium and larger sized contractors to bid.

The 2016 Improvements Project budget is summarized in the following table:

Table1: Project Budget (by work Package)

Package	Locations	Estimated Budget (includes 25% Construction Contingency)
2016-170	Retreat Cove, Montague Harbour, Sturdies Bay (Galiano Island) and Miners Bay (Mayne Island)	\$146,800
2016-171	Piers Island and Swartz Bay	\$120,200
2016-172	Port Washington, Hope Bay, and Port Browning (Pender Island)	\$75,600
CRD	Immediate works at Miners Bay	\$8,200
Sub-Total		\$350,800
	Engineering/Management/Project Contingency	\$175,350
Project Total		\$526,150

Tendering

Three work packages were tendered by CRD Purchasing in accordance with CRD Procurement Policy and Procedures using the formal competitive process on July 22, 2016. Tenders were received for the Project on August 14, 2016 and were reviewed by M&N, and the CRD. The tenders are summarized in the table below:

Table 2: Tender Summary

TENDERER	Pacific Industrial and Marine Ltd.	Heavy Metal Marine Ltd.
Retreat Cove, Montague Harbour, Sturdies Bay (Galiano Island) and Miners Bay (Mayne Island) Contract No. 2016-170.	\$175,374	\$184,074
Piers Island and Swartz Bay Contract No. 2016-171	\$55,030	\$117,157
Port Washington, Hope Bay, and Port Browning (Pender Island) Contract No. 2016-172	\$78,518	\$84,440
Totals	\$308,922	\$385,671

All values above include construction contingency but exclude GST. Pacific Industrial and Marine Ltd. was the low tenderer for each contract and the total budget is within the allocated budget as summarized in Table 1.

Next Steps

1. The formal contracts will be created for execution by the Contractor and the CRD.
2. The resulting construction contracts will be managed by the CRD Integrated Water Services Capital Projects group. Works will be coordinated with CRD Operations staff, Wharfingers, and Commission members. M&N will administer the contracts, undertake periodic inspections of the work and recommend payment.
3. The successful Contractor will develop a detailed schedule for the work packages and identify any key windows and details for restricted use at each facility. The CRD and Contractor will develop a communication plan to inform the Commission, Wharfingers, commercial users, emergency users, and general public. This will include a project website, detailed signage at each facility, formal communication to known emergency and commercial users, and on-going project updates to the Wharfingers as work progresses.
4. At completion, the contracts will be closed and the following year's work program will be re-assessed based on information gathered through implementation of the 2016 Improvements Project and scheduled assessments. It may be necessary to adjust the 2017 Capital Plan project priority based on this new information.

ALTERNATIVES

Alternative 1

That the Southern Gulf Islands Harbours Commission:

1. Award the 2016 Improvements for Retreat Cove, Montague Harbour, Sturdies Bay (Galiano Island) and Miners Bay (Mayne Island) Contract No. 2016-170 to Pacific Industrial and Marine Ltd. for the amount of \$175,374 excluding tax;

2. Award the 2016 Improvements for Piers Island and Swartz Bay Contract No. 171 to Pacific Industrial and Marine Ltd. for the amount of \$55,030 excluding tax; and
3. Award the 2016 Improvements for Port Washington, Hope Bay, and Port Browning (Pender Island) Contract No. 2016-172 to Pacific Industrial and Marine Ltd. for the amount of \$78,518 excluding tax.

Alternative 2

That the Southern Gulf Islands Harbours Commission not award the contracts.

FINANCIAL IMPLICATIONS

Alternative 1 – All bids identified above are within the approved Project budget and compliant with the terms of the tender documents.

The contract values are within the signing authority of the CRD Chief Administrative Officer (CAO). If award of the above noted contracts is approved by the Commission; the contracts will be executed by the CRD CAO.

Alternative 2 – Not awarding the contract would have no immediate financial implications; however, required works to extend the life of the facilities will not be completed this year.

CONCLUSION

The bids received from Pacific Industrial and Marine Ltd. meet the terms of the tenders and are within the total project budget. The total of the bids for the 2016 Improvements Project is approximately \$34,000 below the construction cost estimate completed by M&N.

RECOMMENDATION

That the Southern Gulf Islands Harbours Commission:

1. Award the 2016 Improvements for Retreat Cove, Montague Harbour, Sturdies Bay (Galiano Island) and Miners Bay (Mayne Island) Contract No. 2016-170 to Pacific Industrial and Marine Ltd. for the amount of \$175,374 excluding tax;
2. Award the 2016 Improvements for Piers Island and Swartz Bay Contract No. 171 to Pacific Industrial and Marine Ltd. for the amount of \$55,030 excluding tax; and
3. Award the 2016 Improvements for Port Washington, Hope Bay, and Port Browning (Pender Island) Contract No. 2016-172 to Pacific Industrial and Marine Ltd. for the amount of \$78,518 excluding tax.

Submitted by:	Ian Sander, P.Eng., Manager, Capital Projects
Concurrence:	Ian Jesney, P.Eng., Senior Manager, Infrastructure Engineering
Concurrence:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services

IS:mm
Attachment: 1



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**REPORT TO SOUTHERN GULF ISLANDS HARBOURS COMMISSION
MEETING OF FRIDAY, APRIL 22, 2016**

**SUBJECT RECOMMENDATION FOR AWARD OF CONSULTING SERVICES –
SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK
INFRASTRUCTURE 2016 IMPROVEMENTS PROJECT**

ISSUE

The purpose of this staff report is to seek the approval of the Southern Gulf Islands Harbours Commission (Commission) to award the consulting services contract for the Southern Gulf Islands Harbours Service Dock Infrastructure 2016 Improvements Project (Project).

BACKGROUND

On November 25, 2015 the Commission approved the 2016-2020 5-Year Capital Plan which defined yearly capital expenditures for the dock facilities under the service's responsibility. The 2016 Improvements Project includes works recommended to be completed in the first year of the 5 – year program. In summary the Project includes works at all 9 of the Capital Regional District (CRD) owned facilities with a total approved budget in 2016 of \$526,150.

In 2015, Moffatt & Nichol were retained to undertake an engineering review and condition assessment (Assessment) of the 11 dock facilities under the Southern Gulf Islands Harbours Service's responsibility. The Assessment resulted in following documents which will direct capital projects for the next five years.

- **Stand-Alone Reports for Each Facility:** These reports describe each facility and detail the proposed remedial works, associated cost estimates, and life expectancy.
- **Summary Report:** This report recommended capital programs (Optimized Funding Plan) for years one through five, with detailed work assignments, necessary to maintain the current level of service. Budgetary values for years six through 10 were also provided, as it can be expected that continued spending will be required to maintain the current level of service or for facility replacement. A Metocean Conditions summary was also developed which can be used for planning future works.
- **Five-Year Capital Plan:** The 2016-2020 Five-Year Capital Plan (**Attachment 1**) addresses the work identified in the assessment and provides a budget allowance for the proposed Anson Road Dock Project on Mayne Island (not part of the Moffatt and Nichol study). The Staff Report of November 25, 2015 (**Attachment 2**) summarises the Assessment findings and presents the 5-Year Capital Plan and Service Funding Context.

The goal of the 2016 Improvements Project is to cost effectively implement the recommended immediate and year-one works identified in the Moffatt & Nichol Reports. Implementation of the 2016 Capital Improvements Project, and implementation of subsequent year projects, will be as follows:

1. An engineering consultant will be selected in accordance with the CRD Consultants policy. The consultant will further define the Work Package(s) and develop associated drawings, specifications and a tender document(s) for competitive bid, or work using CRD forces, or on-island trades.
2. Construction services, for the detailed Work Package(s), will be competitively tendered through CRD Purchasing, as defined in the CRD Procurement Policy and Procedures. Some construction work may be undertaken by CRD forces or on-island trades depending on the type of work and available capacity. This will be done to expedite delivery and/or improve efficiency/reduce cost.
3. The resulting construction contract(s) will be managed by the CRD Integrated Water Services Capital Projects group. Works will be coordinated with CRD staff, Wharfingers, and Commission members. The engineering consultant will be required to administer the contract(s), undertake periodic inspections of the works and recommend payment.
4. At completion, the Work Package(s) will be closed and the following year's work package will be re-assessed based on information gathered through implementation of the previous year's work and scheduled assessments. It may be necessary to adjust the Capital Plan project priority based on this new information.

PROPOSAL REVIEW

On March 17, 2016 three proponents, Stantec, Moffatt & Nichol, and Tetra Tech were invited to submit proposals. On April 8, 2016 Moffatt & Nichol and Tetra Tech submitted, and the two proposals were reviewed by the designated CRD evaluation committee. Both proposals complied with all requirements within the Request for Proposals (RFP) and the Moffatt & Nichol (M&N) proposal received the highest Total Score.

- M&N is a global engineering service provider that specializes in the inspection, planning, and design of marine facilities. They have been in business since 1945 and have completed many similar projects along the British Columbia Coastline. Work will be managed and completed using their Vancouver office resources.
- The proposed M&N personnel have the required expertise and relevant experience required to complete this project.
- Their project approach is consistent with the Terms of Reference and their associated task list includes significant additional detail. This provides CRD staff with further confidence with respect to M&N's proposed delivery.
- M&N provided excellent service in the 2015 Southern Gulf Islands Harbours Service Dock Infrastructure Engineering Review and Condition Assessment Project. Through this project M&N staff gained valuable local knowledge of the facilities. The same staff will be utilized in the 2016 Improvements Project.
- M&N have provided two schedules (standard and accelerated) to complete the work by December 2016 that respect the Commission and subsequent CRD Board meeting dates required for construction contract award.
- Key aspects of the M&N proposal are summarised in **Attachment 3**.

- M&N have proposed a Total Fixed Price Fee of \$66,866 not including GST.

M&N's references were contacted to confirm past project experience and client satisfaction. The references provided positive comments.

The project has a total budget of \$526,150 and, after review of the RFP submissions and developing a project work plan, it has been determined that approved Project budget is adequate to accommodate the proposed fee. The proposed budget breakdown is summarized in the following table:

DESCRIPTION	VALUE
Consulting Services	\$67,000
CRD Services	\$55,000
Construction and Construction Contingency (25%)	\$350,700
Project Contingency (11%)	\$53,450
TOTAL	\$526,150

ALTERNATIVES

That the Southern Gulf Islands Harbours Commission:

Alternative 1

Direct staff to award the contract for consultant services for the Dock Infrastructure 2016 Improvements Project to Moffatt and Nichol for a fixed price of \$66,686 excluding taxes.

Alternative 2

Not award the contract for consultant services for the Dock Infrastructure 2016 Improvements Project and provide further direction to staff.

IMPLICATIONS

Alternative 1 – Award of the contract to Moffat and Nichol in the amount of \$66,686 is within the approved budget for this project and their proposal is compliant with the Terms of Reference and the requirements of the RFP. Awarding the Project will allow the Project to be completed in by December of 2016.

Alternative 2 – Not awarding the contract will have no financial implication however, the docks will continue to deteriorate and recommended immediate works will be deferred.

CONCLUSION

The purpose of the 2016 Improvements Project is to cost effectively implement the recommended work identified in the Moffatt & Nichol Report. Coordination with CRD Engineering and Operations staff, Commission members, and Wharfingers will be critical to the success of this project.

The proposed Moffatt & Nichol scope of services agree with the Terms and Conditions set out in the RFP and the proposed fee estimate is within the Project budget. Based on the proposed schedule provided in proposal it is expected that all works will be completed by December of 2016.

Moffatt & Nichol have previously undertaken similar projects and their references have provided positive comment.

RECOMMENDATION

That the Southern Gulf Islands Harbours Commission:

1. Direct staff to award the contract for consultant services for the Dock Infrastructure 2016 Improvements Project to Moffatt and Nichol for a fixed price of \$66,686 excluding taxes.

Ian Sander, P. Eng.
Manager, Capital Projects
Infrastructure Engineering
Integrated Water Services

Ted Robbins, B.Sc., C.Tech.
General Manager, Integrated Water Services
Concurrence

IS/TR:ls



**REPORT TO THE SOUTHERN GULF ISLANDS HARBOURS COMMISSION
MEETING OF FRIDAY, AUGUST 26, 2016**

**SUBJECT SOUTHERN GULF ISLANDS HARBOURS COMMISSION – FLOAT LADDER
INSTALLATION PROJECT**

ISSUE

The purpose of this report is to provide details and costs for installation of float ladders (Float Ladder Project), at all of the Southern Gulf Island Harbours Service (SGIHS) facilities, to the Southern Gulf Islands Harbours Commission (SGIHC) for consideration and approval.

BACKGROUND

At their May 27, 2016 SGHIC meeting, the Commission requested that staff consider the installation of float ladders at all of the SGIHS facilities.

Department of Fisheries and Oceans Canada Small Craft Harbours (DFO) provided a float ladder standard that could be considered for these facilities. Float ladder fabrication details and installation instructions (guidelines) for ladder placement are included as **Attachment 1**, and the guidelines are included as **Attachment 2**.

The guidelines were used to determine the approximate number of ladders required for each facility. The typical details were provided to a local fabricator to develop a cost estimate. The fabricator indicated that the new ladders would be in the order of \$500/unit to supply. For budgetary purposes we have assumed an additional cost of \$500/unit for installation. The following two tables summarize the number of float ladders required for each facility and associated budgetary cost.

Table1: CRD Owned Facilities

Name	Outside Perimeter. (m)	QTY	Unit Price	Total
Retreat Cove	54	2	\$ 1,000	\$2,000
Montague Harbour	150	3	\$ 1,000	\$3,000
Sturdies Bay	60	3	\$ 1,000	\$3,000
Miners Bay	90	5	\$ 1,000	\$5,000
Port Washington	125	4	\$ 1,000	\$4,000
Hope Bay	140	3	\$ 1,000	\$3,000
Port Browning Harbour	166	4	\$ 1,000	\$4,000
Piers Island Harbour	64	3	\$ 1,000	\$3,000
Swartz Bay	92	3	\$ 1,000	\$3,000
Sub-Total		30		\$30,000
Engineering/Contingency				\$15,000
Project Budget				\$45,000

Table 2: DFO Owned Facilities

Name	Outside Perim. (m)	QTY	Unit Price	Total
Horton Bay (DFO)	90	3	\$ 1,000	\$3,000
Lyll Harbour (DFO)	160	5	\$ 1,000	\$5,000
Sub-Total		8		\$8,000
Engineering/Contingency				\$4,000
Project Budget				\$12,000

At this point it has been assumed that the float ladders for the DFO owned facilities will be financed by DFO. This will be confirmed at our next coordination meeting with DFO. If it is deemed unnecessary by DFO, or outside of DFO's responsibility, additional funding for these facilities may be required in the future.

Next Steps

If the Commission approves this project and associated budget, next steps would be as follows:

1. Retain Moffatt & Nichol (M&N), under a change order to their current contract, to optimize ladder locations and details for Capital Regional District (CRD) owned facilities. Assistance and input from Commissioners and/or Wharfingers will be required to finalize number of ladders and locations.
2. Contact DFO and request that they install float ladders at the DFO facilities. The CRD would coordinate the work program.
3. A work package for the CRD owned facilities will be developed for pricing (ladder detail, locations, payment terms etc.)
4. The ladder fabrication and installation for the CRD owned facilities can be achieved in several ways:
 - a. A price can be requested from the successful 2016 Improvements Project Contractor through a contemplated change notice (CCN).
 - b. The CRD can obtain competitive quotes for ladder fabrication and installation through another procurement process outside of the 2016 Improvements Project.
 - c. The CRD can obtain competitive quotes for ladder fabrication and installation can be completed by Southern Gulf Islands Harbours Docks Coordinator.
5. Ladder Installation and project closeout.

ALTERNATIVES

Alternative 1

That the Southern Gulf Islands Harbours Commission:

1. Approve funding of \$45,000 from the Capital Reserve Fund (CRF) for the CRD Facilities Float Ladder Project;
2. Direct staff to retain Moffatt & Nichol to provide engineering services to develop a comprehensive work package for pricing and installation;
3. Direct staff to coordinate with DFO for the installation of float ladders at DFO facilities; and
4. Direct staff to obtain pricing for float ladder fabrication and installation (through a CCN) from the successful 2016 Improvements Project contractor.

Alternative 2

That the Southern Gulf Islands Harbours Commission

1. Approve funding of \$45,000 from the Capital Reserve Fund (CRF) for the CRD Facilities Float Ladder Project;

2. Direct staff to retain Moffatt & Nichol to provide engineering services to develop a comprehensive work package for pricing and installation;
3. Direct staff to coordinate with DFO for the installation of float ladders at DFO facilities; and
4. Direct staff to competitively tender the Facilities Float Ladder Project and manage as a separate project to the 2016 Improvements Project.

Alternative 3

That the Southern Gulf Islands Harbours Commission direct staff to provide more information, or other alternatives.

FINANCIAL IMPLICATIONS

Alternative 1 – The proposed work was not planned and will reduce the current CRF balance and potentially impact the 5 -Year Capital Plan presented in the November 25, 2015 staff report. A copy of this report is included as **Attachment 3**. In summary, remaining capital reserves may not be sufficient to complete all works defined in year 5 of the Capital Plan (depending on the outcome of the annual improvement projects). The 5-Year Capital Plan will need to be reviewed annually and additional funding, or deferral of projects in future years may be necessary.

The CRD Purchasing Policy requires that a Competitive Purchase Process be used for all process with a value in excess of \$10,000 however, this requirement can be waived by the General Manager (GM or CAO) under certain conditions. Under this alternative, waiving the competitive purchase process;

- would reduce CRD Staff administration cost;
- expedite project timelines (contractor already on site);
- provide an opportunity for efficiency through the combination works (the 2016 Improvements Contractor would be working on all CRD owned facilities);
- reduce conflict, and potential additional disruption, created by separate contractors working on the same facility.

If the SGIHC approves Alternative 1, the GM will sign the resulting Change Order (CO) if the Project CCN is within budget and determined to be fair and reasonable by M&N.

Alternative 2 – The proposed work was not planned and will reduce the current CRF balance and potentially impact the 5 -Year Capital Plan as presented in the November 25, 2015 staff report. A copy of this report has been included as **Attachment 3**. In summary, remaining reserves may not be sufficient to complete all works defined in year 5 of the Capital Plan (depending on the outcome of the annual improvement projects). The 5-Year Capital Plan will need to be reviewed annually and additional funding, or deferral of projects in future years may be necessary.

This alternative will meet the CRD Procurement Policy however, the benefits described in Alternative 1 will not be realized.

Alternative 3 - Additional time will be required to deliver project and the benefits described in Alternative 1 will not be realized.

CONCLUSION

The float ladder project will improve safety at all of the dock facilities. Ladder installation could be realized this year if the float ladder project is combined with the 2016 Improvement Project. The float ladder project was not planned and will reduce the balance in the CRF.

RECOMMENDATION

That the Southern Gulf Islands Harbours Commission:

1. Approve funding of \$45,000 from the Capital Reserve Fund (CRF) for the CRD Facilities Float Ladder Project;
2. Direct staff to retain Moffatt & Nichol to provide engineering services to develop a comprehensive work package for pricing and installation;
3. Direct staff to coordinate with DFO for the installation of float ladders at DFO facilities; and
4. Direct staff to obtain pricing for float ladder fabrication and installation (through a CCN) from the successful 2016 Improvements Project contractor.

Submitted by:	Ian Sander, P.Eng., Manager, Capital Projects
Concurrence:	Ian Jesney, P.Eng., Senior Manager, Infrastructure Engineering
Concurrence:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services

SI:mm

Attachments: 3

Ladder Placement Instructions

By: Peter Germaine, Co-op Student

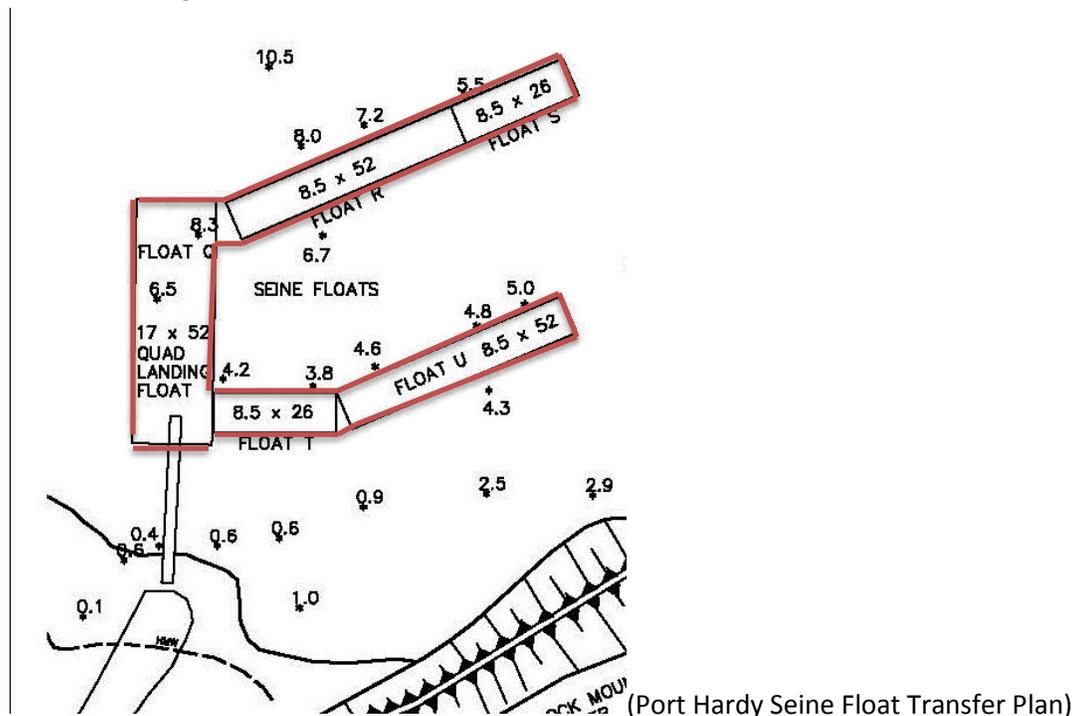
Summary

This document outlines the procedure for designing the layout of ladders on a group of floats, as per the Federal Labour Code. As of August 10, 2015, it is required to have ladders placed every 60 metres around the perimeter of the float. This means that if a person is in the water around the perimeter of any float, it must be a maximum of 30 metres to the nearest ladder.

Procedure

1. Measure the total outside perimeter of the floats. This can be done several ways, including using the transfer plan, the AutoCAD measuring tool, or Google Earth's measuring tool.

Example: In the float layout below, the perimeter that will need ladders is approximately 460m. This is shown by the red line outlining the floats; it is assumed that you cannot swim between two connecting floats.

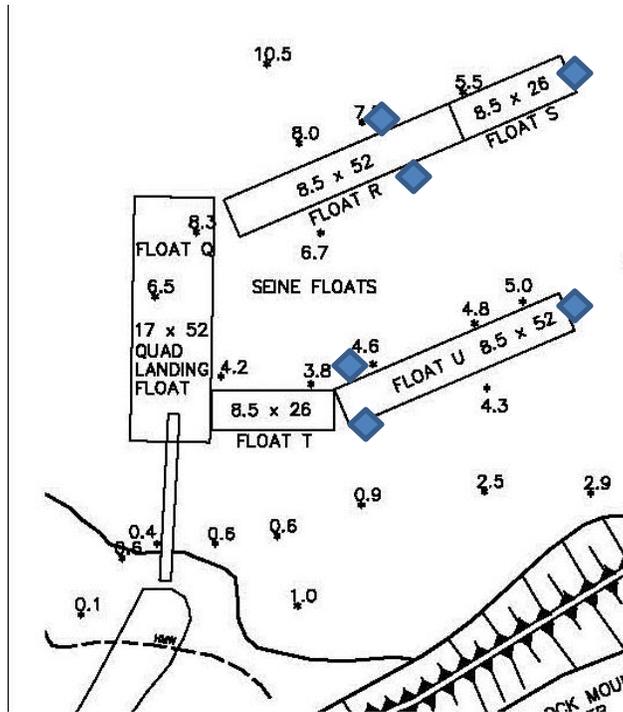


2. Divide the outside perimeter by 60 to determine how many ladders are needed to meet the requirements. **You must always round up to the nearest whole number.**

Example: When there is 460m of perimeter, you must have 8 ladders minimum in place.

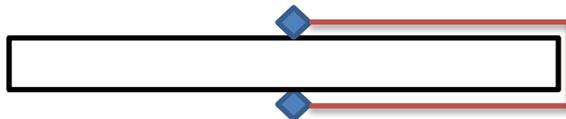
3. Now that you have estimated the amount of ladders needed, we will begin to map the placements. This is done most simply by starting at the furthest most ends of the float and working towards the centre. In this example we will begin at the end of Float U and Float S. The reason for starting at the end of each float is to allow for symmetry for each float, and then it will be easier for people to recognize where the ladders are placed. Place one ladder at each end, then a second and third ladder on each side of the float, 60m from the end ladder following the outside perimeter.

Example:

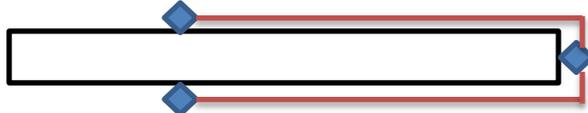


Notes:

- A. The reason for symmetry is to create consistency between the ladder layouts, then if someone has fallen into the water, it will be easier to recognize where the closest ladder may be.
- B. When placing ladders on long, narrow sections of floats, notice that there will be several scenarios you may encounter.
 - i. If the float section is narrow and under 60 metres long, you will only need a ladder on each side, as displayed in the image below. You must ensure that the total length of the red line is still less than 60 metres, to meet the requirements.

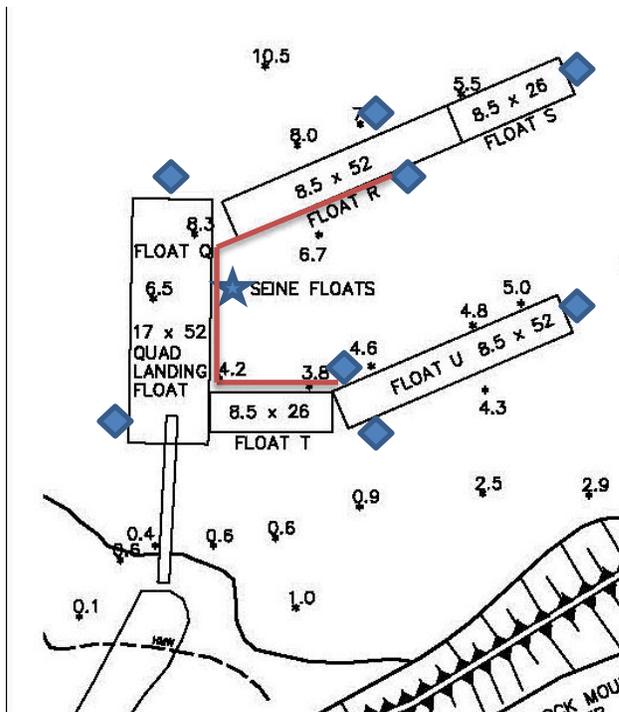


- ii. If the float section is longer than 60 metres, you will need a ladder at the end as well as on both sides, as displayed in the image below. Each line must be less than 60 metres.



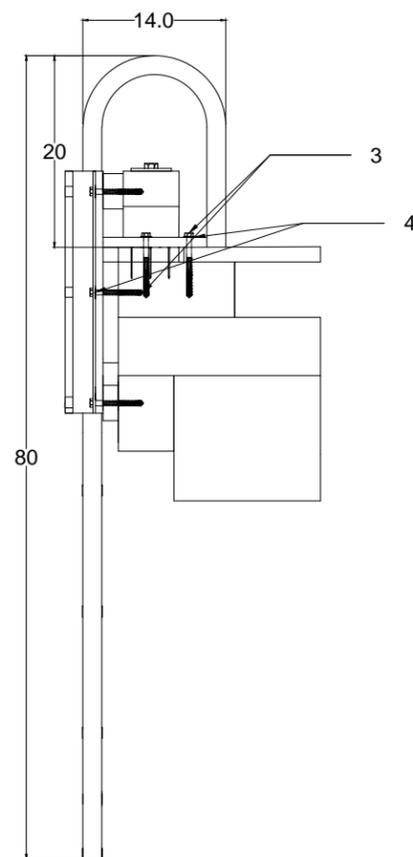
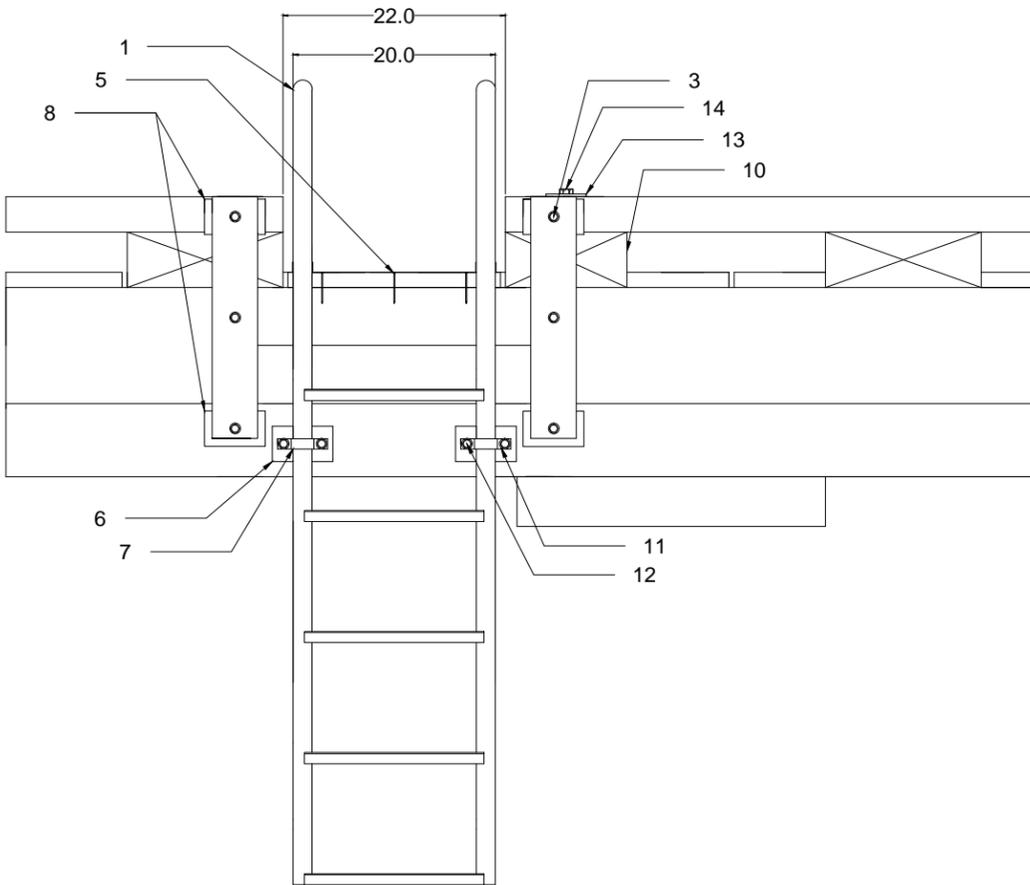
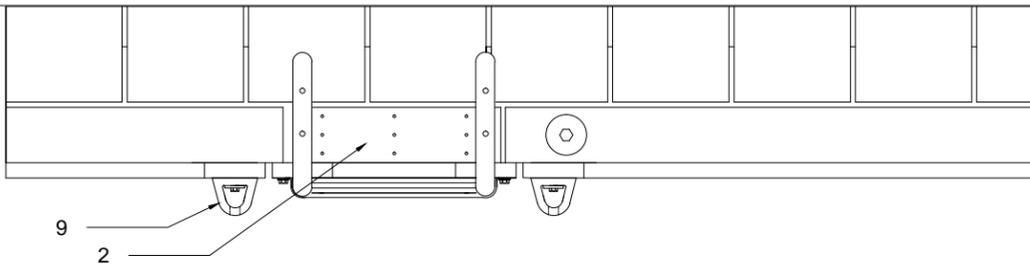
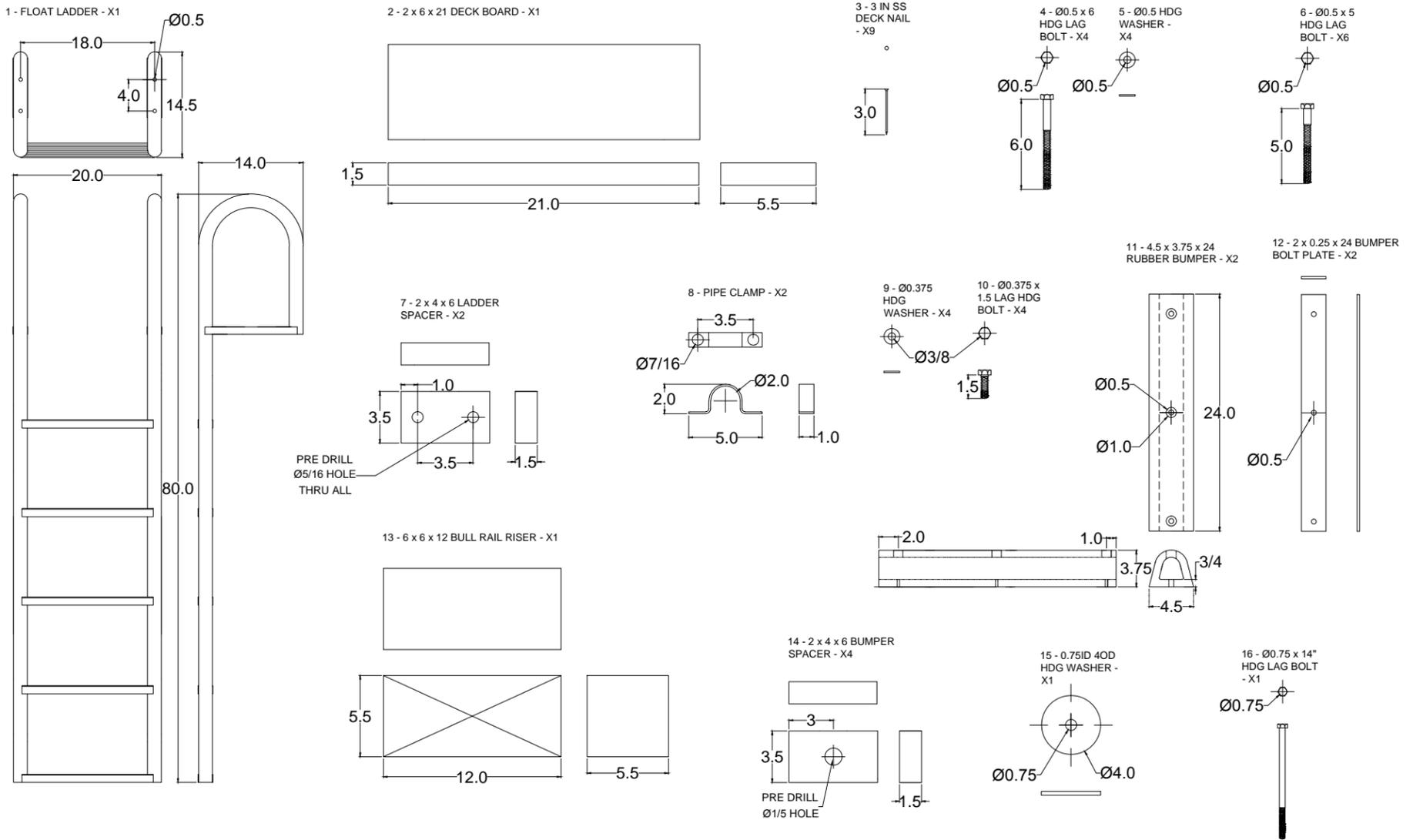
- 4. Following the same procedure as step 3, we will now follow the perimeter of the float another 60 metres and add the remainder of the ladders to the float layout.

Example:



Note: Because the distance of the red line above is more than 60 metres, you will need one ladder in the middle of the red line at the star symbol. If the line had been shorter than 60 metres, a ladder would not need to be placed there.

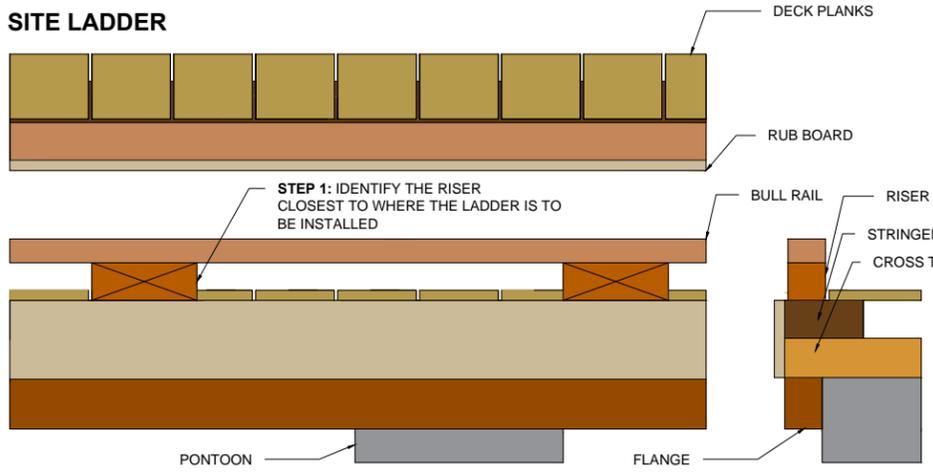
- 5. Now that all of the ladders have been placed, ensure that it is less than 30 metres from any point on the outside perimeter of the float to the closest ladder. Once this has been checked, show the proposed ladder layout to your immediate supervisor for consultation, generally your supervisor may add more ladders to improve visibility. The layout will then be sent to the respective harbour along with the Ladder Installation Instructions and ladders will then be installed at the harbour.



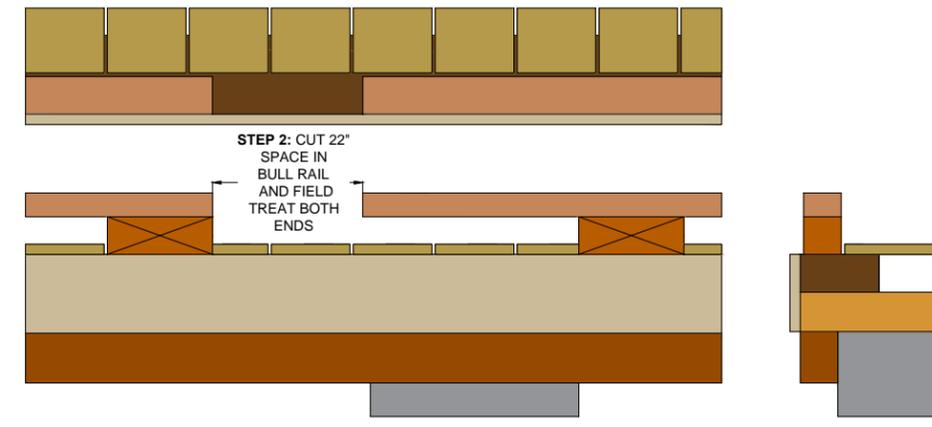
DEPARTMENT OF FISHERIES AND OCEANS CANADA		LADDER INSTALLATION DRAWING	DRAWN BY TREVOR SLACK, REVISED BY GEOFFREY WRIGHT	PART NUMBER	PART NAME	QUANTITY	NOTES
		DRAWING 1 OF 2	PRINT ON ANSI B	7	2 x 4 x 6 LADDER SPACER	2	1) ALL EXPOSED WOOD MUST BE CAPPED OR FIELD TREATED
ALL DIMENSIONS IN INCHES		TOLERANCES ARE ± 1/16 IN	DRAWING NOT TO SCALE	8	PIPE CLAMP	2	
BILL OF MATERIALS							
PART NUMBER	PART NAME	QUANTITY					
1	LADDER	1		9	Ø0.375 HDG WASHER	4	2) LADDERS CANNOT HAVE A FLOAT PERIMETER DISTANCE SPACING GREATER THAN 60 METERS
2	2 x 6 x 21 DECK BOARD	1		10	Ø0.375 X 1.5 LAG HDG BOLT	4	
3	3 IN SS DECK NAILS	9		11	4.5 x 3.75 x 24 RUBBER BUMPER	2	3) DO NOT SECURE LADDER SPACERS TO FLANGE.
4	Ø0.5 x 6 HDG LAG BOLT	4		12	1.5 x 0.125 x 24 BUMPER BOLT PLATE	2	
5	Ø0.5 HDG WASHER	9		13	6 x 6 x 12 BULL RAIL RISER	1	4) PHOTO SHOWS INCORRECT BUMPERS.
6	Ø0.5 x 5 HDG LAG BOLT	6		14	2 x 4 x 6 BUMPER SPACER	4	
				15	0.75ID 40D HDG WASHER	1	5)
				16	Ø0.75 x 14 HDG LAG BOLT	1	PRINTED OCTOBER 30, 2015 14:00

GENERAL FLOAT LADDER INSTALLATION INSTRUCTIONS

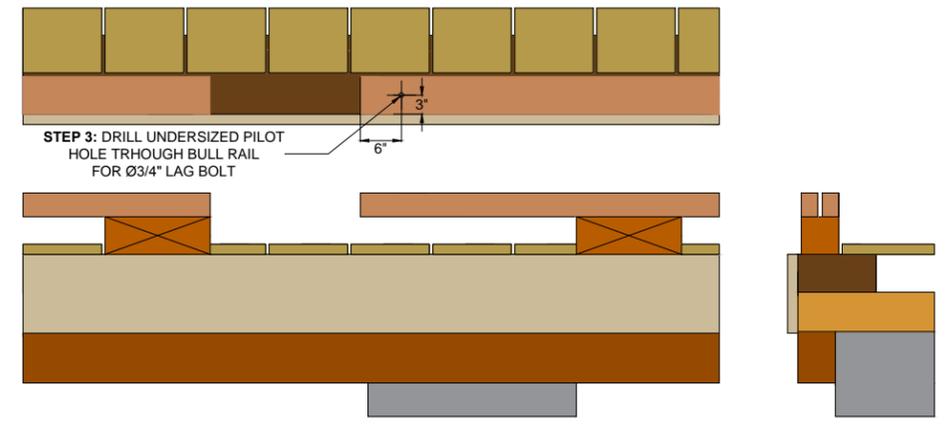
1. SITE LADDER



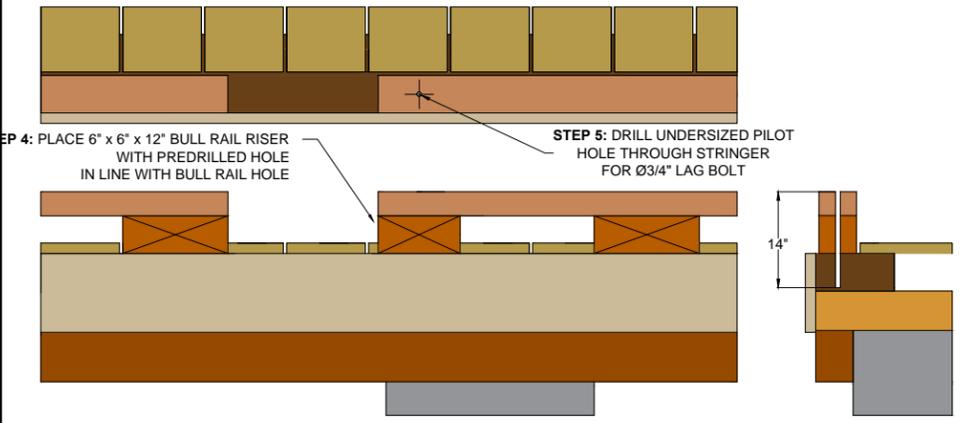
2. CUT BULL RAIL



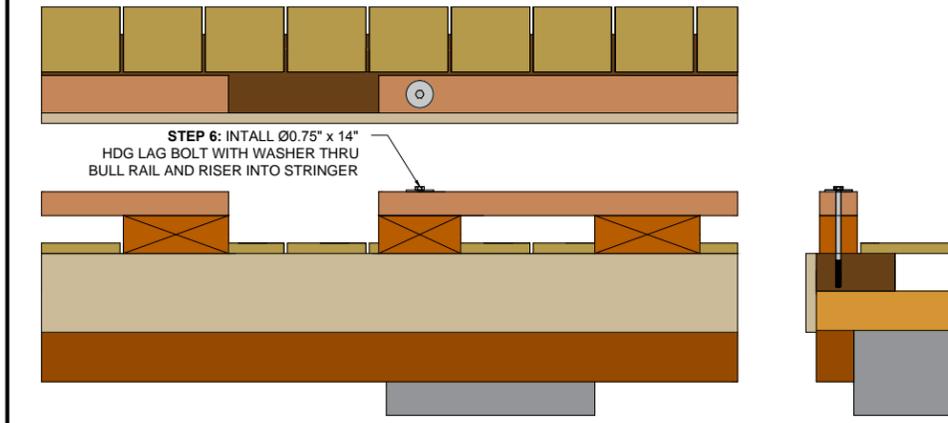
3. PLACE BULL RAIL RISER



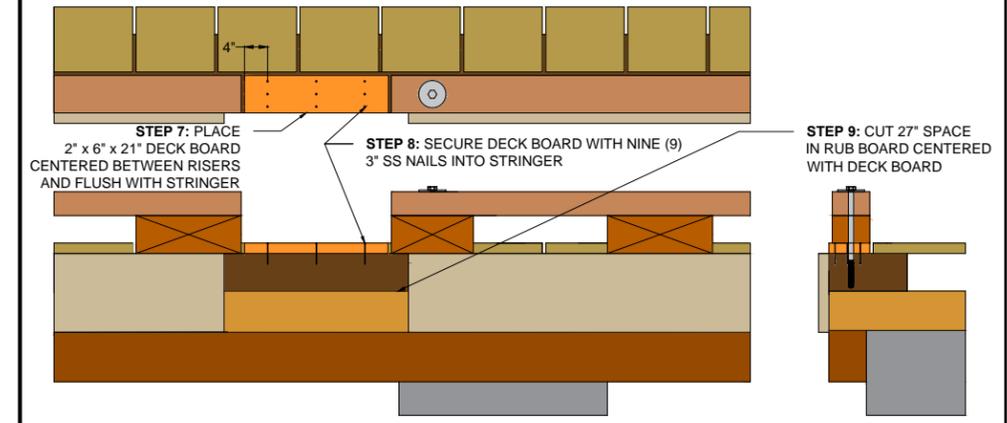
4. DRILL THROUGH FLOAT



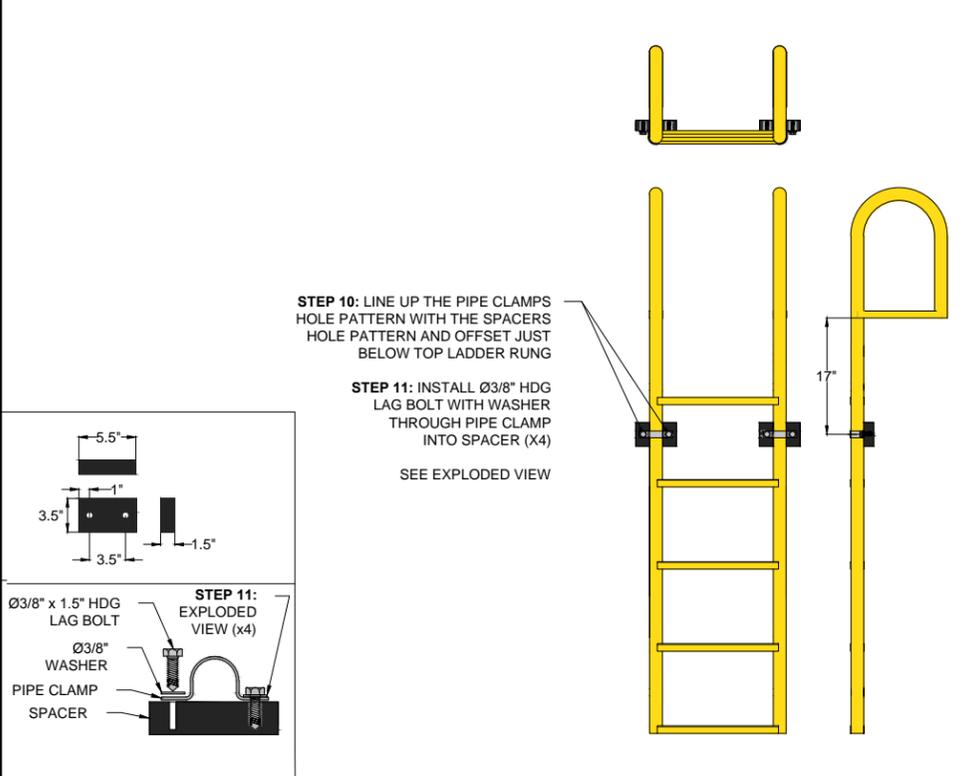
5. SECURE RISER



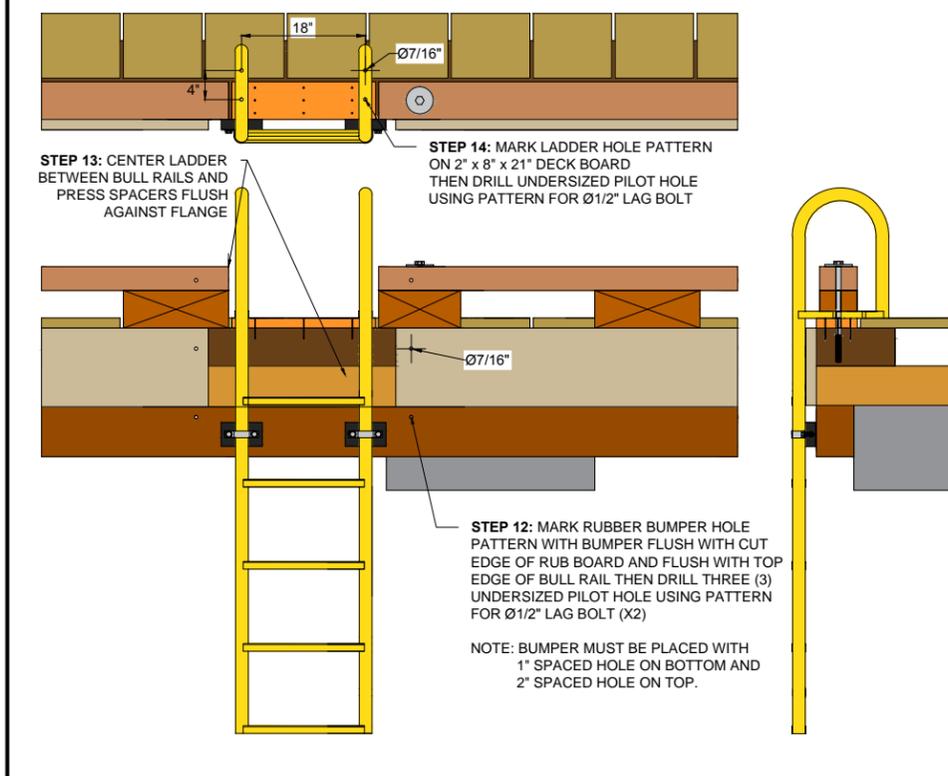
6. INSTALL DECK BOARD



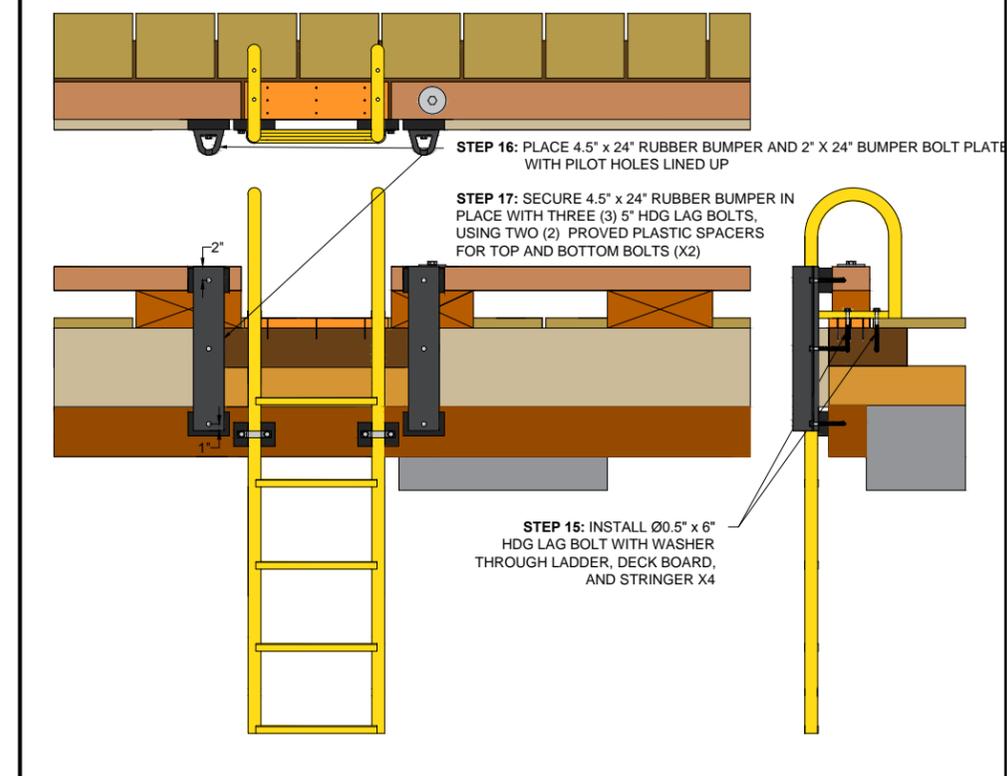
7. PREPARE LADDER



8. PLACE LADDER



9. SECURE LADDER AND ADD RUBBER BUMPER GAURDS



**REPORT TO SOUTHERN GULF ISLANDS HARBOURS COMMISSION
MEETING OF WEDNESDAY, NOVEMBER 25, 2015**

SUBJECT **SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK
INFRASTRUCTURE ENGINEERING REVIEW AND CONDITION
ASSESSMENT PROJECT – DRAFT REPORT REVIEW**

ISSUE

This purpose of this staff report is to summarize the above noted project findings, present the draft 5 Year Capital Plan, and to obtain Southern Gulf Islands Harbours Commission (Commission) feedback to finalize associated project reporting and Five Year Capital Plan.

BACKGROUND

Under the Southern Gulf Islands Harbours Service (SGIHS), there are 11 dock facilities on 6 islands. Nine of the facilities are owned by the Capital Regional District (CRD) and 2 facilities (Horton Bay and Lyall Harbour) remain under Department of Fisheries and Oceans Canada (DFO) ownership, but operated by the CRD under a Management Agreement. These facilities provide a vital link to island community residents and visitors by providing moorage, access points for supplies and mail delivery, water taxi points, ambulance service, Royal Canadian Search and Rescue, and refuge in case of inclement weather or emergency.

The Southern Gulf Islands Harbours Commission approved a project in the 2015 capital budget to undertake an engineering review and condition assessment of the 11 dock facilities under the Southern Gulf Islands Harbours Service's responsibility.

The purpose of the engineering review is to establish the state of each facility and its components and determine if there are structural deficiencies that would impact the performance or safety given its original design and current intended use. The purpose of the condition assessment is to determine if there are improvements required to ensure the dock infrastructure continues to perform safely and in accordance with the expected service life.

Key objectives of this assignment included:

- The assessment is based on maintaining the current use and level of service. Expansion of facilities or enhanced level of service can be addressed on a case-by-case basis as directed by the Commission.
- Catalogue of facility components and estimation of remaining service life/performance.
- Identification of required upgrades, maintenance procedures, and/or alternative options, with clear documentation of justifications and assumptions.
- Prioritize works using a set of criteria/principles and development of a cost effective multi-year program that balances risk, liabilities with service levels, affordability strategies, and policy review development in order to mitigate costs.

Facility condition was evaluated as defined in the Procedures for Inspecting and Assessment of Fixed Timber Docks (Sexsmith, 1994) and the America Society of Civil Engineers (ASCE) Manual and Reports on Engineering Practice No. 101, Underwater Investigations Standard Practice Manual (ASCE, 2001). These manuals set out standard industry practice for assessment of marine structures and define the protocols for estimating service life.

The underwater and surface condition (topside) assessments, and associated draft reporting has been completed by the Engineering Consultant, Moffatt and Nichol. The reports include:

- **Stand-Alone Reports for Each Facility:** These reports describe each facility and detail the proposed remedial works, associated cost estimates, and life expectancy. Please refer to **Attachment 1** for the Stand Alone Report listing.
- **Summary Report:** This report summarizes information provided in the stand-alone reports, includes an Optimized Multi-Year Funding Plan for the Service, and a Metocean Conditions summary which can be used for planning future works. Please refer to **Attachment 2** for the Summary Report for the Southern Gulf Islands Harbours Commission facilities.

The Summary Report and Optimized Multi-Year Funding Plan includes recommended capital programs for years 1 through 5 (with detailed work assignments) necessary to maintain the current level of service. Budgetary values for years 6 through 10 are also provided, as it can be expected that continued spending will be required to maintain the current level of service or for facility replacement.

Residual life estimates and budgetary values for years 6 through 10, are rough values based on subjective judgment of the current deterioration and observed damage in structural elements, but do not provide a guarantee on actual life span. It is important to note that component life expectancy can be shorter or longer than estimated depending on the surrounding environment and level of use. Rot and marine bores can spread very quickly, greatly reducing the estimated values.

Assuming that the facilities will be routinely inspected, and that scheduled maintenance and repairs are done, the service life of the structures may be extended beyond their design life as can be seen in many of the facilities. However; at some point in time, depending on the rate of deterioration, it may make economic sense to do full replacement and this aspect should be considered during ongoing assessments and work package planning.

Dock inspection, repair and maintenance are iterative processes that require periodic review of the facilities and re-evaluation of residual life estimates and re-prioritization of proposed work packages. Detailed projects for years 6 through 10, and planning for replacement, will be identified through the ongoing capital and maintenance programs and through the scheduled facility inspections.

Draft 5-Year Capital Plan and Longer Term Funding

Staff have included a Draft 5-Year Capital Plan (Schedule G) based on scenario #2 below. The plan has been included as **Attachment 4** for reference. The 2016-2020 draft 5-Year Capital Plan includes addressing the work related to deficiencies identified in the study and provides a budget allowance for the proposed Anson Road Dock Project on Mayne Island (not part of the Moffatt and Nichol study). Further to the initial 5-Year Capital Plan, there are projects that are intended to be completed during the 2021-2025 time period.

CRD staff have developed three long term funding scenarios based on the Moffatt & Nichol Optimized Multi-Year Funding Plan. It has been assumed that the identified repairs on the 9 CRD owned facilities, will be the responsibility of the SGIHS, and repairs on the Horton Bay and Lyall Harbour docks will be the responsibility of DFO. CRD staff are currently in communication with DFO to confirm responsibilities for maintenance and repairs of the Lyall Harbour and Horton Bay

docks. Initial discussions have confirmed the ‘major’ repair works will be the responsibility of DFO while ongoing ‘minor’ repair and maintenance effort falls under SGIHS responsibility. Assessment reports for Lyall Harbour and Horton Bay have been provided to DFO and they will be providing a response confirming the scope of the repair work and associated schedule. All DFO works will be coordinated with the CRD and the Commission prior to implementation.

The optimized Multi-Year Funding Plan was developed to address the necessary repairs based on priority (defined in Sexsmith, 1994, ASCE, 2001, and professional judgement) to maintain the current level of service. It was then optimized to combine like works and reduce the number of site visits (and associate mobilization and demobilization costs) required by a contractor.

Service Funding Context

Service funding is generated from two sources of revenue, parcel tax and moorage fee revenue which are used to fund annual operation and maintenance for all 11 docks, and fund annual contributions to the Capital Reserve Fund. The current reserve fund balance available for capital project funding is \$1,338,693 million (capital transfer has not yet been made for 2015). Project annual contributions to the capital reserve fund range from approximately \$181,000 to over \$200,000.

Staff have developed three long term funding scenarios for the Service that reflect the Optimized Multi-Year Capital Funding Program and funding options and consider budget allowances for phase one and phase two of the proposed Anson Road Dock on Mayne Island. The three scenarios identify projected revenues and expenditures by year and are included in **Attachment 3**. The table below summarizes the resulting remaining annual reserve for each scenario:

Scenario	Description	2016	2017	2018	2019	2020	2021-2025
1	No Tax Increase <u>without</u> the Anson Road Facility.	\$164,610	\$1,023,240	\$788,270	\$543,740	\$24,210	\$(932,015)
2	No Tax Increase <u>with</u> the Anson Road Facility and deferral of projects.	\$764,610	\$623,240	\$298,270	\$53,740	\$(30,490)	\$(1,422,015)
3	Tax Increase <u>with</u> the Anson Road Facility and no deferral of projects	\$824,321	\$743,970	\$481,345	\$300,442	\$281,114	\$0

Scenario 1: The existing rate structure and reserve fund are sufficient to support the first 5 years of the Optimized Multi-Year Funding Program. The reserve fund is depleted in year 2020 and expected repair costs are higher than projected revenues, creating a deficit. Note the 2020 Sturdies Bay Project (\$94,000) is deferred to 2021 to balance the 5 year plan.

Scenario 2: The existing rate structure and reserve fund are sufficient to support the first 5 years of the Optimized Multi-Year Funding Program with the new Anson Road Project. Proposed 2020 works for Retreat Cove, Sturdies Bay, and Miners Bay are deferred to the 2021 - 2025 Program. Similar to the above scenario, expected repair costs are higher than projected revenues, creating a deficit.

Scenario 3: This scenario models the impact of increased taxation on scenario #1 to *balance* the long term plan. It has been assumed that a tax increase of 25% (Maximum Requisition as defined below) is applied in 2016 and a tax increase of 54% is applied in 2020. These increases equate to an additional \$10.25/parcel and \$27.45/parcel per year respectively.

Options for Increase in Revenue

Based on the Optimized Multi-Year Funding Plan, it is anticipated that additional revenue or a reduced level of service will be required in the near future to create an economically viable program. Options for increased revenue include an increase to the property tax requisition, an increase in moorage fees, borrowing (debt), and grants, and are summarized below. The funding requirements for both operating and capital will be reviewed annually by staff and considered by the Commission, and adjustments can be made as the capital program proceeds and actual revenue, expenditures and annual financial position are known.

1. Tax Requisition Increase

At present, the service is at the maximum level of the current requisition (Property Tax Levy) allowable under the service Bylaw No. 2614. The maximum requisition may be increased by 25% or less every 5 years with approval of the Electoral Area Services Committee (EASC) and CRD Board but without the need for approval of the Inspector of Municipalities (Province). To increase the maximum requisition, the Commission can recommend an increase to the EASC and the CRD Board for their approval. This process usually takes approximately 2-3 months and needs to be approved by February of the proposed increase budget year to take effect.

The current maximum levy is the greater of \$0.10/\$1,000 assessed value or \$238,844 yearly (whichever is greater). A 25% increase would work out to \$0.125/\$1,000 of assessed value or \$298,555 yearly, and provide approximately \$60,000 in additional yearly tax revenue for the service. It should be noted that, if assessed values are predicted to increase over the next 5 – 10 years, then the maximum levy would increase as well. This would provide approximately \$300,000 of additional funding in the 5-Year Capital Program (assuming an increase in 2016). This increase would equate to an additional \$10.25/parcel per year.

For an increase greater than 25%, support of the taxpayers of the SGIHS would need to be confirmed through a successful referendum. A referendum requires significant effort however, financial modelling indicates that a tax increase will be required in the medium term to support the long term capital plan.

2. Moorage Fee Increase

CRD Bylaw 3814 gives the CRD the authority to charge moorage fees to customers for the use of CRD docks in the Southern Gulf Islands. Fees may be changed at any time by an amendment to the Bylaw. With direction from the Commission, CRD staff would prepare a staff report for the EASC recommending that the CRD Board approve the amended bylaw.

Moorage fees contribute approximately 21% (or \$70,000) of annual revenue to the SGIHS. While increasing moorage fees would add to overall revenue, it is likely that an increase in moorage fees alone to support the capital program would be acceptable to the public and would not provide a stable revenue source. An increase to moorage fees could be considered together with other revenues sources.

3. Borrowing from the Municipal Finance Authority (MFA)

Capital works can be financed with long term loans through the MFA. Taxpayer approval of a loan authorization bylaw is required either through an alternative approval process (AAP) or referendum to allow the CRD to borrow funds. Both processes can be expected to take several months.

MFA's long term interest rate is currently 2.92% and a repayment term of 15 years is typically used by the CRD for long term debt financing. The interest rate is locked in for the first 10 years of the debt. After 10 years, the amount outstanding may be paid back in part or in full. Any remaining amount would be repaid over 5 years at the interest rate in effect in the first of the 5 years.

The chart below summarizes the maximum debt the SGIHS could undertake assuming that the entire current annual capital reserve funding is instead used for annual debt servicing. A \$2,296,030 loan would require \$181,710 per year in principal and interest payments. The transfer to the CRF in the 2016 preliminary budget is \$181,710, and it is proposed to increase each year after that.

Interest Rate	Loan Amount	Interest	Principal	2016 Re-Payment
2.92%	\$2,296,030	\$67,044	\$114,666	\$187,710

4. Grants

Grants, such as the Canada 150 Grant Program can be applied for as the opportunities arise. At the direction of the SGIHS, the CRD can make application for such grants on behalf of the SGIHS, typically matching capital funds from the service are required. While grant programs are available, it should be noted that programs are limited and, as such, should not be a basis of financial planning. If the SGIHS is successful in a grant application, proposed rate or fee increases, or potential borrowing may be deferred.

CAPITAL PLAN IMPLEMENTATION

A Work Package will be generated each year based on the Optimized Multi-Year Funding Plan and new information as it becomes available. The annual implementation process will be as follows:

1. An engineering consultant will be selected in accordance with the CRD Consultants policy. The consultant will further define the Work Package and develop associated drawings, specifications and a tender document for competitive bid.
2. Construction services, for the detailed Work Package, will be competitively tendered through CRD Purchasing, as defined in the CRD Procurement Policy and Procedures.
3. The resulting construction contract will be managed by the CRD Integrated Water Services Capital Projects group. Works will be coordinated with CRD staff, Wharfingers, and Commission members. The engineering consultant will be required to administer the contract, undertake periodic inspections of the works and recommend payment.

4. At completion, the Work Package will be closed and the following year's work package will be re-assessed based on information gathered through implementation of the previous year's work and scheduled assessments. It may be necessary to adjust the Capital Plan project priority based on this new information.

ALTERNATIVES

That the Southern Gulf Islands Harbours Commission:

1. a. Approve the Southern Gulf Islands Harbours Service 2015 dock engineering review and condition assessment reports as prepared by Moffatt and Nichol; and
b. Approve the 2016-2020 five year capital plan as presented in Schedule G (Attachment 4 of this report).
2. a. Direct staff seek further information from Moffatt and Nichol prior to approving the Southern Gulf Islands Harbours Service 2015 dock engineering review and condition assessment reports; and
b. Direct staff to amend the 2016-2020 five year capital plan as presented in Schedule G (Attachment 4 of this report).

IMPLICATIONS

SOCIAL IMPLICATIONS

A work program that focuses on health and safety and prolonging residual life has been developed to maintain the current level of service and create a viable long term financial plan for the SGIHS. The optimized Multi-Year Funding Plan was developed to address the necessary repairs based on priority (defined in Sexsmith, 1994, ASCE, 2001, and professional judgement). It was then optimized to combine like works and reduce the number of site visits required by a contractor.

Improvements to the level of service (such as increased deck loading and addition of new lighting systems) or expansion of the facilities (new floats) have not been included. Improvement to level of service or facility expansion can be evaluated on a case-by-case basis as directed by the Commission.

ECONOMIC IMPLICATIONS

Based on the Optimized Multi-Year Funding Plan, additional revenue or reduced levels of service will be required in the near future to create a long term economically viable program. Currently, revenues for the service are generated through a property tax levy and moorage rates. The proposed 5 Year Capital Plan assumes no increases however, additional funding will be required in the near future to maintain the facilities.

CONCLUSION

The facilities managed under the SGIHS are aging and ongoing repairs and maintenance can be expected to continue into the foreseeable future. In the longer term, the current SGIHS funding model is not sufficient to fund the required long term maintenance and repairs to maintain the current level of service and fund new projects, such as the Anson Road project and as such, additional revenue, or reduced level of service will be required to maintain financial viability.

The Commission could consider increasing revenue in the coming budget years through a combination of tax increase, moorage increase and debt to fund the proposed program. The SGIHS should focus efforts on maintaining the current level of service and prolonging facility residual life. Improvements to level of service or facility expansion can be assessed on a case-by-case basis as directed by the Commission.

The SGIHS could also consider grant programs, when available, for an alternate source of funding to expand the facilities or improve service. These opportunities can be reviewed on a case-by-case basis.

CRD staff will continue work with DFO to coordinate major repairs of the Lyall Harbour and Horton Bay facilities.

Dock inspection, repair and maintenance is an iterative process that requires periodic review of the facilities and re-evaluation of proposed work plans and residual life estimates. Residual life estimates and budgetary values for years 6 through 10 are rough estimate values based on subjective judgment of the current deterioration and observed damages in the structural elements.

Assuming that the facilities will be routinely inspected and scheduled maintenance and repairs are undertaken, the service life of the structures may be extended beyond their design life as seen in many of the facilities. However, at some point in time, depending on the rate of deterioration, a business case may be made to do full replacement and planning and should take this aspect into consideration.

RECOMMENDATION

That the Southern Gulf Islands Harbours Commission:

- a. Approve the Southern Gulf Islands Harbours Service 2015 dock engineering review and condition assessment reports as prepared by Moffatt and Nichol; and
- b. Approve the 2016-2020 five year capital plan as presented in Schedule G (Attachment 4 of this report).



Ian Sander, P.Eng.
Manager, Capital Projects



Ted Robbins, B.Sc., C. Tech.
General Manager, Integrated Water Services
Concurrence

IS:TR:mm

Attachments: 4



**REPORT TO THE SOUTHERN GULF ISLANDS HARBOURS COMMISSION
MEETING OF FRIDAY, AUGUST 26, 2016**

SUBJECT **VEHICLE LOAD CAPACITY ANALYSIS FOR THE MINERS BAY, HOPE BAY,
PORT WASHINGTON, AND STURDIES BAY DOCKS**

ISSUE

The purpose of this report is to present the results of the Vehicle Load Capacity Analysis for the for the Miners Bay, Hope Bay, Port Washington, and Sturdies Bay docks to the Southern Gulf Islands Harbours Commission (SGIHC) for consideration.

BACKGROUND

At their February 26, 2016 meeting, the SGIHC approved the award of engineering analysis to determine if improvements were required to allow for vehicular loading on the approaches and wharf heads for the Miners Bay, Port Washington, Hope Bay, and Sturdies Bay docks.

In the November 2015 Moffatt & Nichol Southern Gulf Islands Dock Infrastructure Engineering Review and Condition Assessment project report, it was noted that, "During the inspection, we have found that some facilities have had repairs done that compromise the capability of vehicle use, such as the use of planking rather than structural wood members for decking. In addition, we are in agreement with the conclusion in a previous report by Hugh Tuttle that the use of vehicles, even where capability still exists, will create more wear on surfaces, and reduce facility lifetime. In addition, it increases the insurance premiums for the facilities and increases hazards to pedestrians. Given the importance of maintaining the operations facilities, and the vehicle cause of the large fire on the Lyall Harbour facility in 2003, the provision of vehicle capacity comes with some negative effects."

In 2008, the SGIHC considered planning and funding for improvements at the Miners Bay, Port Washington, Hope Bay, and Sturdies Bay docks that would allow for vehicular loading on the approaches and wharf heads. At the time, primarily due to financial constraints, the Commission agreed to not undertake improvements required to allow for vehicular loading at these locations, and instead restrict vehicular access and only undertake improvements required to maintain a 'walk-on' standard. Some improvements have been conducted at these docks since that time.

Vehicle Load Capacity Analysis Results

A copy of the July 29, 2016 Moffatt & Nichol draft memorandum titled *Vehicle Load Capacity Analysis and Order of Magnitude Cost Estimates for Four SGIHS Facilities* is included as **Appendix 1**. In summary:

1. Single Axle Vehicles and Tandem Axle Vehicles were considered.
2. Major retrofits for all facilities would be required to support Tandem Axle Vehicles due to their heavier loads.

3. Port Washington and Miners Bay can accommodate Single Axle Vehicles without major structural modifications. Some decking may need to be replaced.
4. Hope Bay and Sturdies Bay will need retrofits to the approach trestles and wharf heads to accommodate a Single Axle Vehicle. The estimated cost to retrofit the facilities is \$76,100 and \$123,000 respectively.
5. Port Washington and Miners Bay currently have provisions to permit emergency vehicle access to the top portion of each facility. A removable bollard was recently installed at Hope Bay facility to improve pedestrian access. Vehicle access is restricted to light operations vehicles. No vehicle access is permitted to the Sturdies Bay facility.
6. The 5-year Capital Plan does not include retrofits to the Hope Bay and Miners Bay facilities for vehicle access. As such these retrofits have not been included in the five year capital plan.
7. The works proposed at the Hope Bay and Miners Bay facilities, as part of the 2016 improvements project, are required regardless of a decision to upgrade these facilities for vehicle use.

At present, vehicle access is not permitted at any of the Southern Gulf Islands Harbours Service (SGIHS) facilities however, Single Axle Vehicle access can be provided at Miners Bay, Hope Bay, Port Washington, and Sturdies Bay if desired. Vehicle access will have several implications to the SGIHS, which include:

- Increased wear on the decking structure and reduced life expectancy. This will potentially increase facility upgrade and maintenance costs;
- Potential conflict between pedestrians and vehicles;
- Potential for increased insurance premiums;
- Increased fire exposure;
- Requirements for load rating and signage; and
- Significant immediate cost for structural upgrades at the Hope Bay and Sturdies Bay facilities. These modifications would reduce the capital reserve fund requiring additional funding to complete the proposed 5-Year Capital Plan, or deferral of another project.

CONCLUSION

Vehicle access at the Port Washington and Miners Bay facilities can be accommodated without any structural modification and minor management effort however, vehicle access comes with some negative implications, as described above.

Significant structural upgrades are required for vehicle access at the Hope Bay and Sturdies Bay facilities. In addition to the cost for improvements, vehicle access comes with some negative implications, as described above.

The Commission should review the value of vehicle access at each facility with their communities and determine if vehicle access, in some form, is desired. The CRD will take direction, evaluate options for the desired direction and provide recommendations.

RECOMMENDATION

That the Southern Gulf Islands Harbours Commission receive the staff report for information.

Submitted by:	Ian Sander, P.Eng., Manager, Capital Projects
Concurrence:	Ian Jesney, P.Eng., Senior Manager, Infrastructure Engineering
Concurrence:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services

SI:mm

Attachments: 1

DRAFT MEMORANDUM

To: Ian Sander, P.Eng. Manager Capital Projects, Capitol Regional District
Cc: Veronica Duque, Moffatt & Nichol
From: Paul Hoo, Project Manager, Moffatt & Nichol
Date: July 29, 2016
Subject: Vehicle Load Capacity Analysis and Order of Magnitude Cost Estimates for Four SGIHS Facilities
M&N Job No.: 8985-55

1. INTRODUCTION

Capital Regional District (CRD) requested Moffatt & Nichol (M&N) to perform a vehicle load capacity analysis and to prepare an order of magnitude cost estimate for possible upgrades of the timber wharves at four locations in the Southern Gulf Island (Hope Bay, Port Washington, Miners Bay, and Sturdies Bay). This memorandum provides a description and results of the vehicle load capacity analysis and the possible structural upgrades to the trestles and wharf heads as well as the assumptions used in the analysis and developing the order of magnitude cost estimate.

2.0 ANALYSIS AND RESULTS

The vehicle load capacity analysis of the various structural components of the approach trestles and wharf heads for each of the four sites were undertaken using hand calculations. These calculations were checked using the results generated by SAP2000, a commercially available structural analysis software. The analysis was carried out in accordance with the clauses in the 2014 version of the Canadian Highway Bridge Design Code, S-6.

Some assumptions are used for the load capacity analysis and these are detailed in Attachment 1. A few key assumptions are:

- Timber materials are Douglas Fir-Larch No. 1;
- Structural members section are able to carry their full capacity (i.e. no loss of section due to deterioration and/or damage);
- Vehicles are assumed to drive down the trestle to the wharf head and then reverse out. Vehicle turn around on the wharf head is not evaluated and,
- All horizontal structural components were assumed to be simply supported.

For the load capacity analysis, two vehicles types are used in the analysis, tandem axle drive vehicles and single drive axle vehicle as shown in Figure 1.

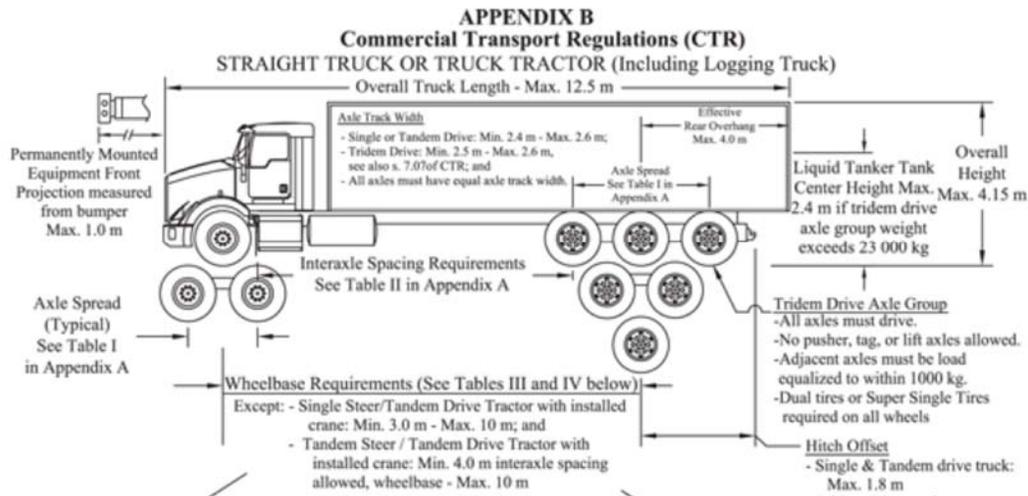


Figure 1. Design Vehicles

Source: BC Transport Regulations

In general, the results show that for all four sites, the approach trestles and wharf heads will need major retrofit for tandem drive axle vehicles due to their heavier loads. However, the single drive axle vehicle can be accommodated at Port Washington and Miners Bay without any modifications. However, Hope Bay and Sturdies Bay will need retrofits to the approach trestles and wharf heads to carry a single drive axle vehicles as shown in Tables 1 and 2.

Table 1. Hope Bay

Hope Bay Dock Facility Summary Table
Location: Pier Head

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	4x12	1	1	1.35	15.3	20.7	26.8	0.77	
Deck Flexure	4x12	1	1	1.35	1.2	1.6	2.64	0.61	
Stringers Shear	8x12	1	0.5	1.35	117.1	79.0	132	0.60	double up on 8x12
Stringers Flexure	8x12	1	0.5	1.35	135.2	91.3	101.6	0.90	double up on 8x12
Bent Cap Shear	12x12	1	1	1.35	50.9	68.7	84.5	0.81	
Bent Cap Flexure	12x12	1	1	1.35	34.9	47.1	56.7	0.83	
Pile Axial	13" Butt	1	1	1.35	75.6	102.1	324.5	0.31	

1. Used only if distribution factor is not applied

**Table 2. Sturdies Bay**

Sturdies Bay Dock Facility Summary Table
Location: Pier Head

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	2x12	1	1	1.35	15.9	21.5	26.8	0.80	change to 4x12 decking
Deck Flexure	2x12	1	1	1.35	1.3	1.8	2.6	0.68	change to 4x12 decking
Stringers Shear	6x10	0.42	1	1.35	120	68.0	80	0.85	double 6x10
Stringers Flexure	6x10	0.34	1	1.35	102	46.8	55.6	0.84	double 6x10
Bent Cap Shear	12x12	1	1	1.35	67.6	91.3	84.5	1.08	need to add intermediate piles to reduce span length
Bent Cap Flexure	12x12	1	1	1.35	52	70.2	56.7	1.24	need to add intermediate piles to reduce span length
Pile Axial	13" Butt	1	1	1.35	67.6	91.3	324.5	0.28	

1. Used only if distribution factor is not applied

3.0 APPROACH TRESTLE AND WHARF HEAD MODIFICATIONS

Based on the vehicle load capacity analysis, the following retrofits are required:

- Hope Bay:
 - Additional 8"x12" stringers in the overstressed areas in order to increase capacity as shown in Figure 2 for Hope Bay Dock Facility.
- Sturdies Bay:
 - Replace decking with new 4"x12" planks on both approach trestle and wharf head;
 - Add new stringers on both trestle and wharf head to increase existing capacity; and,
 - Add piles to shorter bent pile cap at the wharf head to at least match trestle bent cap spans as shown in Figure 3.

All sites will require vehicle load limit signs to ensure that structural members are not overstressed.

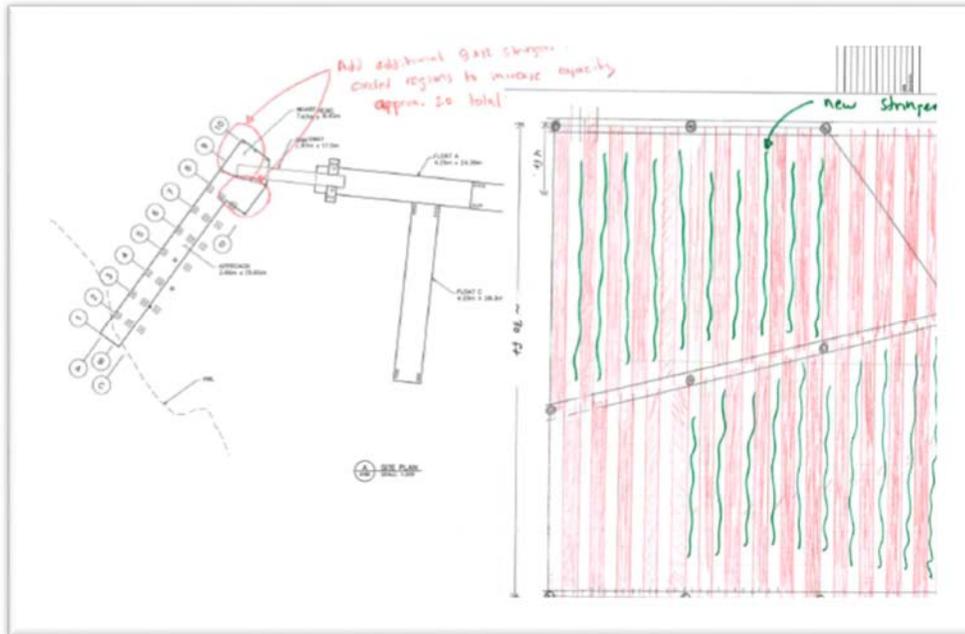


Figure 2. Hope Bay Upgrades

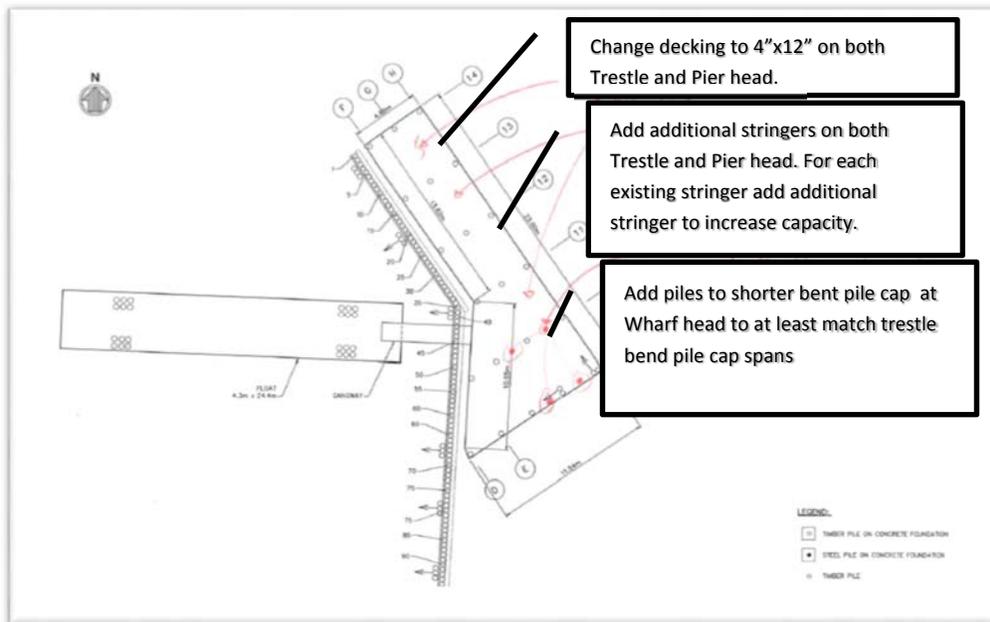


Figure 3. Sturdies Bay Upgrades

4.0 COST ESTIMATE

Due to significant structural upgrades required to accommodate the tandem drive axle vehicles, no cost estimates are prepared for this vehicle type.

For the single drive axle vehicles, the order of magnitude capital cost estimate for structural improvements at Hope Bay and Sturdies Bays are summarized as follows:

Table 3 – Summary of Order of Magnitude Cost Estimate- Hope Bay

Component Description	TOTAL
Mobilization/Demobilization including insurance, bonds	\$18,700
Wharf Head Structural Upgrades	\$57,400
TOTALS	\$76,100

**Table 4 – Summary of Order of Magnitude Cost Estimate- Sturdies Bay**

Component Description	TOTAL
Mobilization/Demobilization including insurance, bonds	\$19,700
Trestle and Wharf Head Structural Upgrades	\$103,500
TOTALS	\$123,200

A detailed breakdown of the order of magnitude capital cost estimates for the proposed upgrade works is provided in Attachment 2.

5.0 LIMITATIONS OF THE COST ESTIMATES

Contractor bid prices can also vary widely even after detailed engineering plans are prepared. Such variability is a function of market conditions which exist at the time of bidding and are difficult to predict in advance. Furthermore, construction and rehabilitation work around existing facilities are prone to complications such as encountering buried utilities or other obstructions that are inaccurately documented. Such obstructions can increase the cost of construction significantly, and are considered part of the project risk.

In view of the above uncertainties and the importance of not under-estimating the costs, we have included a contingency amount of 30% to reflect the fact that these are indicative estimates. We have attempted to identify the major cost components and have made provisional allowances where possible for such things as utility relocations.

6.0 ASSUMPTIONS

In addition to the general limitations discussed above, our cost estimate is based on the following assumptions and exclusions:

- Some unit prices were estimated by referencing actual bid prices from other recent similar projects.
- Cost estimates include a 30% contingency allowance which we consider to be appropriate for a project at this stage of development. The contingency is not a reflection of the accuracy of the estimates but covers as yet undefined items and quantities of work that will be determined during the design or construction phases.

Exclusions:

- The cost estimates exclude any major habitat compensation works.
- The cost estimate excludes removal and/or remediation of potential contaminated soils and hazardous materials.



- The costs exclude the GST/HST and any applicable tariffs and duties on equipment.
- Indirect cost for engineering and project management are not included.

We trust that the review provided above meets with your immediate needs. If you have any questions, or required additional information, please do not hesitate to contact the undersigned.

Prepared by:

Reviewed by:

[Original signed by: Veronica Duque]

[Original signed by: Paul Hoo, P.Eng.]

Veronica Duque

Paul Hoo, P.Eng.
Project Manager



ATTACHMENT 1

Vehicle Load Capacity Analysis Memorandum

MEMORANDUM

To: Paul Hoo, P.Eng., P.E., C.Eng.

From: Jim Brady, S.E.; Anthony Goryl, E.I.T.

Date: 06/09/2016

Subject: Vehicle Load Analysis for Wood Structures

M&N Job No.: 8958

Introduction

The scope of work was to perform a vehicle loading analysis for timber wharves on four locations in the Southern Gulf Islands (Hope Bay, Port Washington, Miners Bay, and Sturdies Bay). Moffatt & Nichol inspection reports were provided for site specific information along with supplemental reference documents (i.e. previous inspection reports and drawings produce by other companies). Pier heads and trestles were analyzed for each facility to determine whether or not the structural components were sufficient to withstand vehicle loading. The review looked at decking, stringers, pile caps and piles for vertical loads only.

Evaluation

The Canadian Highway Bridge Design Code v. 2014 was used to evaluate the existing pier structures. Specifically, Section 5 "Method of Analysis" and 14 "Evaluation" were used in evaluation and determination of the demand loads. Section 9 "Wood Structures" was used to determine component capacities. Engineering Design in Wood, O86-14, was used to evaluate the capacity of the timber piles.

The reference documents were used to determine the geometry of the structural components. In some cases assumptions had to be made, which are documented in the calculation package and also in this memorandum.

For capacity calculations all wood components, including piles, were assumed to be Douglas Fir-Larch No. 1. All structural members are assumed to have full capacity.

Vehicle demand forces were calculated by hand and checked using SAP2000. All horizontal structural components were assumed to be simply supported.

Vehicle Load

Vehicle loads were established using the provincial documents for commercial truck dimensions and weights for single and tandem drive design trucks. Each pier was checked for both single and tandem drive vehicles. An impact factor of 1.35, determined for a vehicle speed dynamic allowance of 0.5 (speeds between 10km/h and 25km/h) multiplied by a wood reduction factor of 0.70, was applied to all demand loads resulting from the live load analysis (factors come from the Canadian Highway Bridge Design Code Sections 5 and 14). Vehicles are assumed to drive down the trestle to the pier head then back out. Vehicle turn around on the pier head will not be evaluated.

Deck

Deck demands were calculated by applying a tire patch of 0.445m x 0.25m with a pressure of 401kPa (~60psi) to the deck planks. A tire width of 0.445m was specified by the provincial documents and 0.25m was assumed to be the length of the tire as specified by the Canadian Highway Bridge Design Code.

Stringers

Stringers were evaluated based on a distribution factor as specified in Section 5 of the Canadian Highway Bridge Design Code. In some cases, like the Hope Bay pier head where large bent skew angles occur, this method was not used and the stringers were evaluated by applying wheel loads to the member in order to produce the largest shear and moment demands. Approximate span lengths were provided in the reference documents and used in the analysis of the stringers. Deck dead load is small relative to the vehicle live load and therefore was not considered in the analysis.

Bent Caps

Bent caps were analyzed by placing the heaviest axles in a way that produced the largest shear and moment demands, similar to the stringer analysis. However, no distribution factors were used for the bent caps as the spacing between them is too large.

Piles

The pile axial demand was taken as the largest bent cap shear force. Pile unbraced lengths had to be assumed because pile lengths were not provided in the reference documents. All pile unbraced lengths are estimated to be between 8m and 10m. It is assumed that the piles are adequately braced in the longitudinal and transverse direction on the trestle and pier head allowing $K=0.8$. If this is not the case then the pile capacity would be significantly reduced. It is assumed that any longitudinal movement toward land will be resisted by the abutment. Unbraced lengths longer than approximately 10m with a $K=0.8$ would most likely result in overstress in the piles. Pile butt diameters were assumed to be 13in unless otherwise noted.

Results

Attached are summary tables for the capacities of the structural components and demands produced by both tandem and single axle design vehicles. Demand capacity ratios highlighted in red indicate overstress. Every structure indicated overstress in at least one structural component for the tandem drive axle design vehicle. Port Washington and Miners Bay have adequate capacity to withstand loading from the single drive axle design vehicle without any retrofit. However, Hope Bay and Sturdies Bay require retrofit in order to accommodate the single drive axle design vehicle. See attached drawings which indicate retrofit schemes for Hope Bay and Sturdies Bay. After retrofit of Hope Bay and Sturdies Bay all piers will be able to accommodate the single drive axle design vehicle.

Hope Bay Dock Facility Summary Table

Location: Trestle

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	4x12	1	1	1.35	15.3	20.7	26.8	0.77	
Deck Flexure	4x12	1	1	1.35	1.2	1.6	2.64	0.61	
Stringers Shear	8x12	0.3	1	1.35	105.3	42.6	66	0.65	
Stringers Flexure	8x12	0.22	1	1.35	81.7	24.3	50.8	0.48	
Bent Cap Shear	12x12	1	1	1.35	51.6	69.7	84.5	0.82	
Bent Cap Flexure	12x12	1	1	1.35	23.8	32.1	56.7	0.57	
Pile Axial	13" Butt	1	1	1.35	75.6	102.1	324.5	0.31	

1. Used only if distribution factor is not applied

Hope Bay Dock Facility Summary Table

Location: Pier Head

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	4x12	1	1	1.35	15.3	20.7	26.8	0.77	
Deck Flexure	4x12	1	1	1.35	1.2	1.6	2.64	0.61	
Stringers Shear	8x12	1	0.5	1.35	117.1	79.0	132	0.60	double up on 8x12
Stringers Flexure	8x12	1	0.5	1.35	135.2	91.3	101.6	0.90	double up on 8x12
Bent Cap Shear	12x12	1	1	1.35	50.9	68.7	84.5	0.81	
Bent Cap Flexure	12x12	1	1	1.35	34.9	47.1	56.7	0.83	
Pile Axial	13" Butt	1	1	1.35	75.6	102.1	324.5	0.31	

1. Used only if distribution factor is not applied

Port Washington Dock Facility Summary Table

Location: Trestle

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle			DCR	Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)		
Deck Shear	4x12	1	1	1.35	15.3	20.7	26.8	0.77	
Deck Flexure	4x12	1	1	1.35	1.2	1.6	2.64	0.61	
Stringers Shear	8x12	0.3	1	1.35	121.3	49.1	66	0.74	shows 6x12 on drawings
Stringers Flexure	8x12	0.22	1	1.35	96.4	28.6	50.8	0.56	shows 6x12 on drawings
Bent Cap Shear	12x12	1	1	1.35	48.9	66.0	84.5	0.78	MN insp. rpt. Says 11"x12"
Bent Cap Flexure	12x12	1	1	1.35	32.8	44.3	56.7	0.78	MN insp. rpt. Says 11"x12"
Pile Axial	13" Butt	1	1	1.35	62.4	84.2	324.5	0.26	

1. Used only if distribution factor is not applied

Port Washington Dock Facility Summary Table

Location: Pier Head

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle			DCR	Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)		
Deck Shear	4x12	1	1	1.35	15.3	20.7	26.8	0.77	
Deck Flexure	4x12	1	1	1.35	1.2	1.6	2.64	0.61	
Stringers Shear	8x12	0.3	1	1.35	89.3	36.2	66	0.55	shows 6x12 on drawings
Stringers Flexure	8x12	0.22	1	1.35	61.4	18.2	50.8	0.36	shows 6x12 on drawings
Bent Cap Shear	12x12	1	1	1.35	48.9	66.0	84.5	0.78	MN insp. rpt. Says 11"x12"
Bent Cap Flexure	12x12	1	1	1.35	32.8	44.3	56.7	0.78	MN insp. rpt. Says 11"x12"
Pile Axial	13" Butt	1	1	1.35	62.4	84.2	324.5	0.26	

1. Used only if distribution factor is not applied

Miners Bay Dock Facility Summary Table

Location: Trestle

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	4x12	1	1	1.35	18	24.3	26.8	0.91	
Deck Flexure	4x12	1	1	1.35	1.6	2.2	2.6	0.83	
Stringers Shear	6x12	0.3	1	1.35	89.3	36.2	48.5	0.75	
Stringers Flexure	6x12	0.22	1	1.35	67	19.9	37.3	0.53	
Bent Cap Shear	12x12	1	1	1.35	45	60.8	84.5	0.72	
Bent Cap Flexure	12x12	1	1	1.35	30.6	41.3	56.7	0.73	
Pile Axial	13" Butt	1	1	1.35	89.3	120.6	215.4	0.56	

1. Used only if distribution factor is not applied

Miners Bay Dock Facility Summary Table

Location: Pier Head

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	4x12	1	1	1.35	18	24.3	26.8	0.91	
Deck Flexure	4x12	1	1	1.35	1.6	2.2	2.6	0.83	
Stringers Shear	6x12	0.3	1	1.35	89.3	36.2	48.5	0.75	
Stringers Flexure	6x12	0.22	1	1.35	67	19.9	37.3	0.53	
Bent Cap Shear	12x12	1	1	1.35	49	66.2	84.5	0.78	
Bent Cap Flexure	12x12	1	1	1.35	32.8	44.3	56.7	0.78	
Pile Axial	13" Butt	1	1	1.35	89.3	120.6	215.4	0.56	

1. Used only if distribution factor is not applied

Sturdies Bay Dock Facility Summary Table

Location: Trestle

Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	2x12	1	1	1.35	15.9	21.5	26.8	0.80	change to 4x12 decking
Deck Flexure	2x12	1	1	1.35	1.3	1.8	2.6	0.68	change to 4x12 decking
Stringers Shear	6x10	0.42	1	1.35	120	68.0	80	0.85	double 6x10
Stringers Flexure	6x10	0.34	1	1.35	102	46.8	55.6	0.84	double 6x10
Bent Cap Shear	12x12	1	1	1.35	57.7	77.9	84.5	0.92	
Bent Cap Flexure	12x12	1	1	1.35	26.6	35.9	56.7	0.63	
Pile Axial	13" Butt	1	1	1.35	57.7	77.9	324.5	0.24	

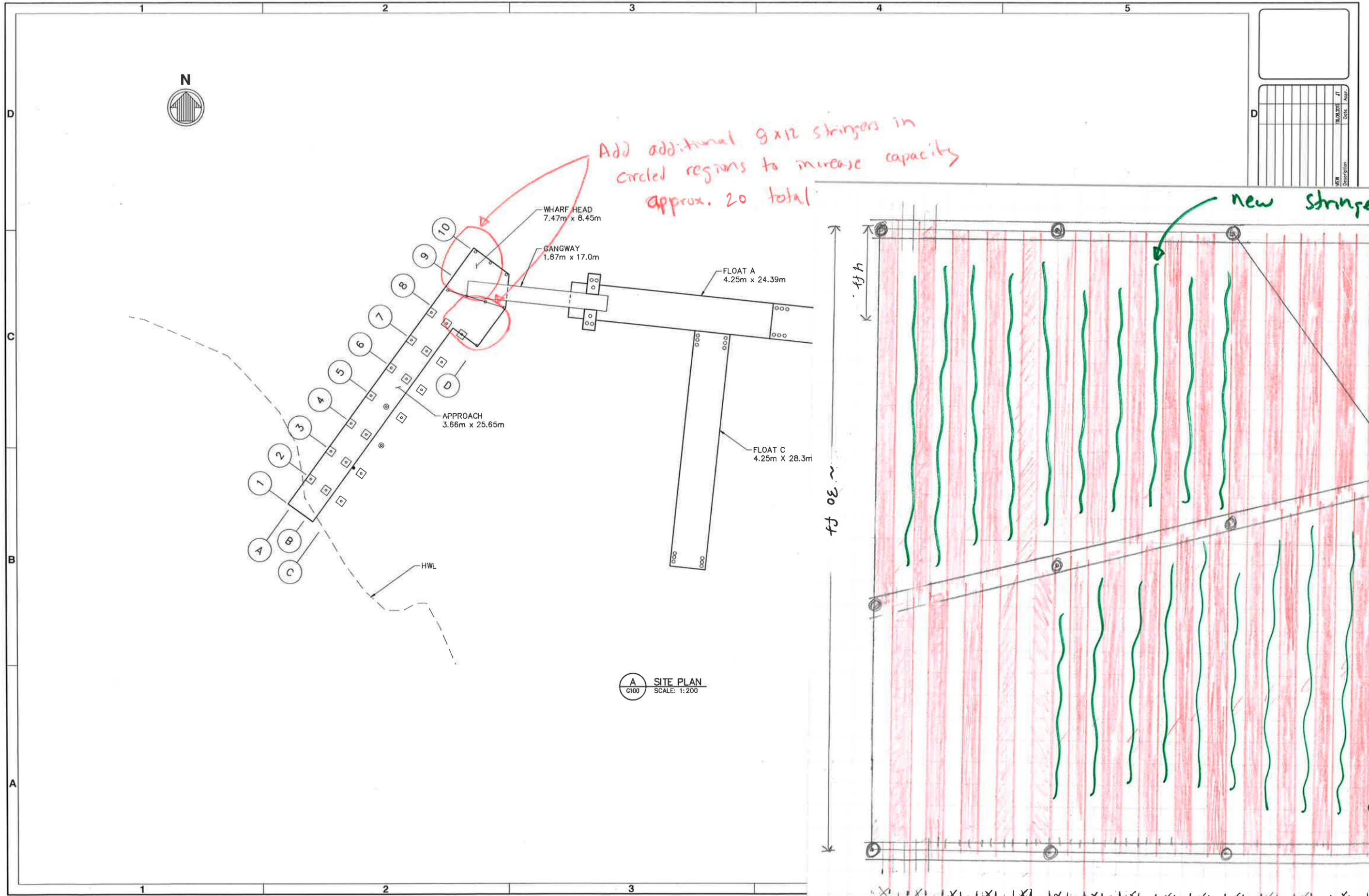
1. Used only if distribution factor is not applied

Sturdies Bay Dock Facility Summary Table

Location: Pier Head

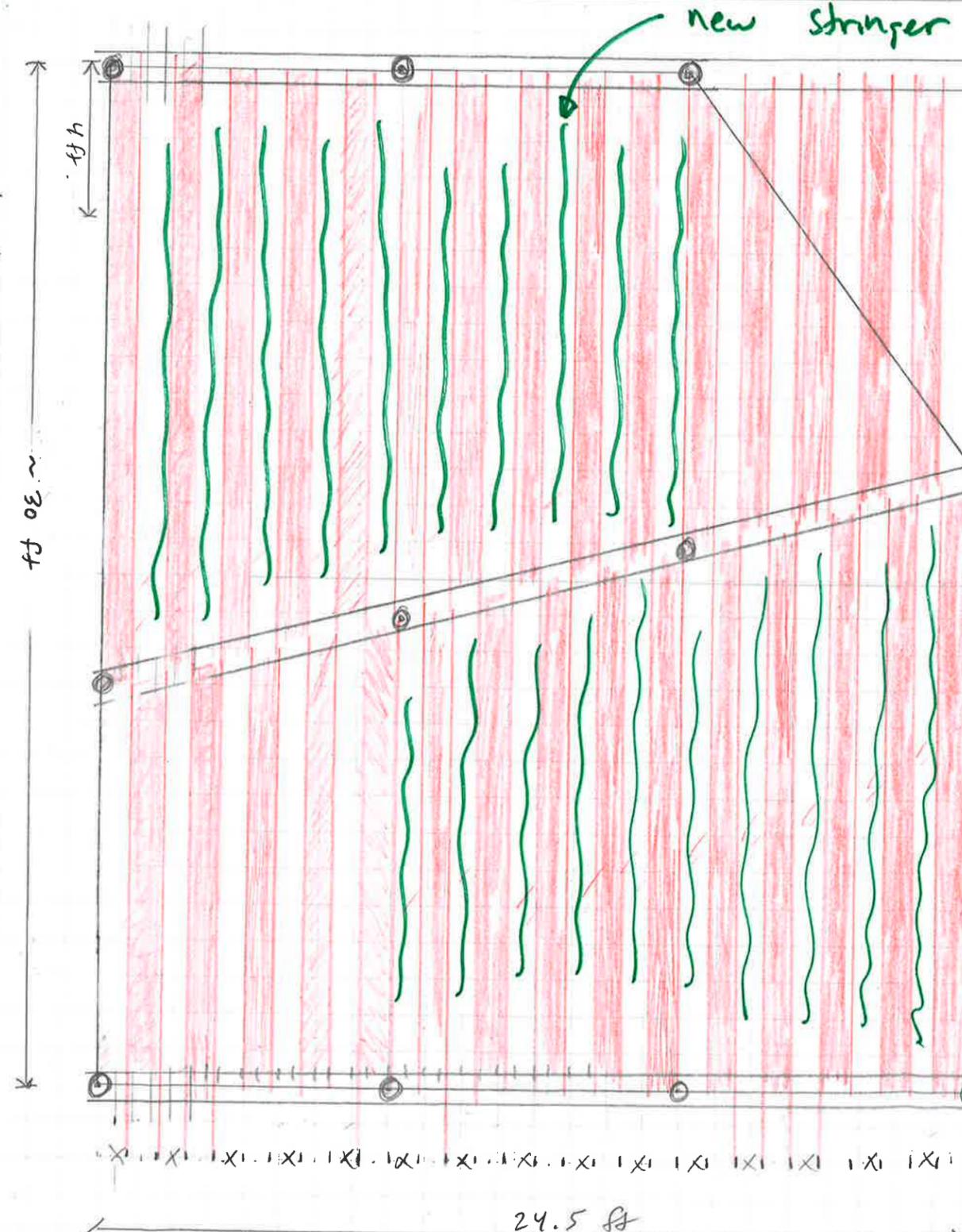
Component	Size (in)	Distribution Factor	Axle to Wheel Modification Factor ¹	Impact Factor	Single Drive Axle				Notes
					Unfactored Demand (kN, kN-m)	Demand (kN, kN-m)	Capacity (kN, kN-m)	DCR	
Deck Shear	2x12	1	1	1.35	15.9	21.5	26.8	0.80	change to 4x12 decking
Deck Flexure	2x12	1	1	1.35	1.3	1.8	2.6	0.68	change to 4x12 decking
Stringers Shear	6x10	0.42	1	1.35	120	68.0	80	0.85	double 6x10
Stringers Flexure	6x10	0.34	1	1.35	102	46.8	55.6	0.84	double 6x10
Bent Cap Shear	12x12	1	1	1.35	67.6	91.3	84.5	1.08	need to add intermediate piles to reduce span length
Bent Cap Flexure	12x12	1	1	1.35	52	70.2	56.7	1.24	need to add intermediate piles to reduce span length
Pile Axial	13" Butt	1	1	1.35	67.6	91.3	324.5	0.28	

1. Used only if distribution factor is not applied



Add additional 9x12 stringers in circled regions to increase capacity approx. 20 total

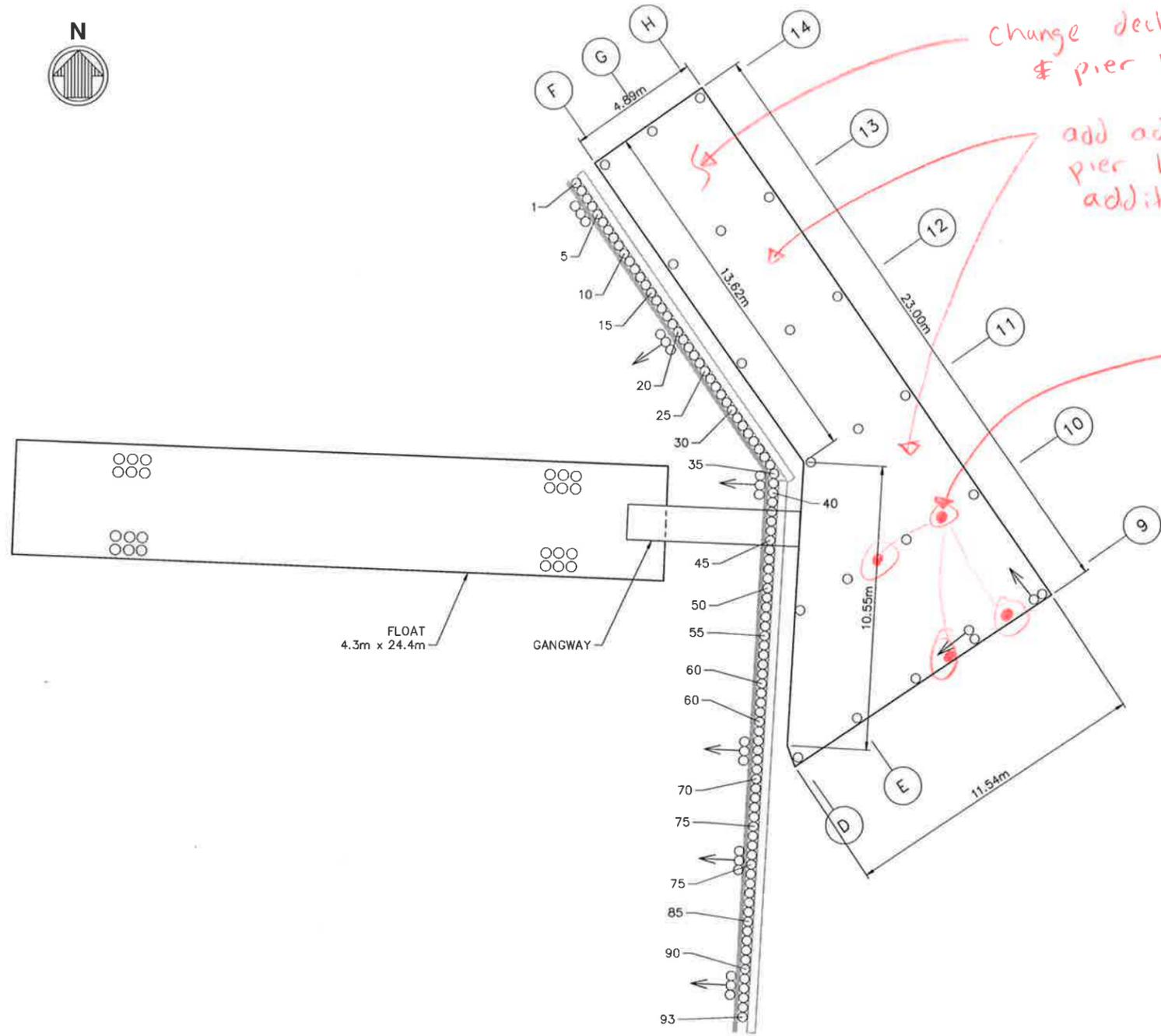
New Stringer



REV	Description	DATE	BY	APP

A SITE PLAN SCALE: 1:200

24.5 ft



change decking to 4x12 on both trestle & pier head

add additional stringers on both trestle & pier head. for each existing stringer additional additional stringer to increase capacity

add piles to shorten bent cap span length @ pier head to at least match trestle bent cap span length.

A SITE PLAN
G109 SCALE: 1:100

- LEGEND:**
- TIMBER PILE ON CONCRETE FOUNDATION
 - STEEL PILE ON CONCRETE FOUNDATION
 - TIMBER PILE
 - STEEL PIPE PILE
 - BATTER PILE
 - LIGHT STANDARD

2000 0mm 2000 4000
SCALE: 1 : 100

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

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Mark	Description	Date	Appr.
A	ISSUED FOR REVIEW	04.08.2015	JT

CRD DOCKS INSPECTION & ASSESSMENT

STURDIES BAY
SITE PLAN AND G.A.

Designed by:	JT	Date:	MAY 15, 2015
Drawn by:	PC/AM	Man Project No.:	8985
Reviewed by:	PH	Drawing code:	
Submitted by:	MOPFATT & NICHOL	Drawing Scale:	Plot scale: 1:1 (Metric D)

moffatt & nichol
777 WEST BROADWAY, SUITE 301
VANCOUVER, BC, CANADA, V5Z 4J7
604-707-9004

SEAL

Sheet Reference No.
G109

INDEX: OF



ATTACHMENT 2
COST ESTIMATE BREAKDOWN

DRAFT

OPINION OF PROBABLE COST	DATE PREPARED 29-Jul-16	SHEET OF
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OWNER AND LOCATION Capital Regional District Sturdies Bay	CONSTRUCTION CONTRACT NO.	 moffatt & nichol
PROJECT TITLE Sturdies Bay	ESTIMATED BY Moffat & Nichol	
STATUS OF DESIGN		M&N JOB ORDER NUMBER 8985

ITEM DESCRIPTION	QUANTITY		MATERIAL & EQUIPMENT COST		LABOUR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
Sales Tax (British Columbia)	12.0%							
Overhead and Profit	20.0%							
Contingency	30.0%							

General								
Major Mobilization/Demobilization								
Mobilization/Demobilization	1	Lump Sum	\$5,000	\$5,000	\$2,240.00	\$2,240	\$7,240.00	\$7,240
Insurance/Bonds	1	Lump Sum	\$4,000	\$4,000	\$0.00	\$0	\$4,000.00	\$4,000
Total				\$9,000		\$2,240		\$11,240
Sale Tax, Overhead and Profit, and Contingency				\$6,725		\$1,674		\$8,399
Total Estimated Construction Cost				\$15,725		\$3,914		\$19,639
Total Opinion of Probable Cost						Major Mobilization/Demobilization Cost:		\$19,700

Sturdies Bay								
Pier Head								
Remove existing Decking	1	Lump Sum	\$0.00	\$0	\$6,000.00	\$6,000	\$6,000.00	\$6,000
Add new Timber Decking 4"x12"	1593	sqft	\$10.80	\$17,200	\$8.44	\$13,440	\$19.23	\$30,640
Add new piles 50'	4	No.	\$810.00	\$3,240	\$2,400.00	\$9,600	\$3,210.00	\$12,840
Add new stringer 6x10	139	ft	\$13.26	\$1,843	\$16.12	\$2,240	\$29.38	\$4,083
Disposal	6.40	tons	\$250.00	\$1,600	\$632.39	\$4,047	\$882.39	\$5,647
Total				\$23,883		\$35,327		\$59,210
Sale Tax, Overhead and Profit, and Contingency				\$17,845		\$26,397		\$44,242
Total Estimated Construction Cost				\$41,729		\$61,724		\$103,452
Total Opinion of Probable Cost						Pier Head Cost:		\$103,500

OPINION OF PROBABLE COST				DATE PREPARED 29-Jul-16		SHEET OF		
OWNER AND LOCATION Capital Regional District Hope Bay			CONSTRUCTION CONTRACT NO.					
PROJECT TITLE Hope Bay			ESTIMATED BY Moffat & Nichol					
			STATUS OF DESIGN					
						M&N JOB ORDER NUMBER 8985		
ITEM DESCRIPTION	QUANTITY		MATERIAL & EQUIPMENT COST		LABOUR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL

Sales Tax (British Columbia)	12.0%
Overhead and Profit	20.0%
Contingency	30.0%

General

Major Mobilization/Demobilization

Mobilization/Demobilization	1	Lump Sum	\$5,000	\$5,000	\$1,680.00	\$1,680	\$6,680.00	\$6,680
Insurance/Bonds	1	Lump Sum	\$4,000	\$4,000	\$0.00	\$0	\$4,000.00	\$4,000
Total				\$9,000		\$1,680		\$10,680
Sale Tax, Overhead and Profit, and Contingency				\$6,725		\$1,255		\$7,980
Total Estimated Construction Cost				\$15,725		\$2,935		\$18,660
Total Opinion of Probable Cost						Major Mobilization/Demobilization Cost:		\$18,700

Hope Bay

Pier Head

Add 8"x12" Stringer (\$902 each string of 30ft)	20	each	\$902.00	\$18,040	\$140.00	\$2,800	\$1,042.00	\$20,840
Remove existing Decking	1	Lum Sum	\$0.00	\$0	\$6,000.00	\$6,000	\$6,000.00	\$6,000
Reinstall existing Decking	1	Lum Sum	\$0.00	\$0	\$6,000.00	\$6,000	\$6,000.00	\$6,000
Total				\$18,040		\$14,800		\$32,840
Sale Tax, Overhead and Profit, and Contingency				\$13,479		\$11,059		\$24,538
Total Estimated Construction Cost				\$31,519		\$25,859		\$57,378
Total Opinion of Probable Cost							Pier Head Cost:	\$57,400

Agenda Item 9

SOUTHERN GULF ISLANDS HARBOURS	2015	2016		
		BUDGET	JAN - JUL	% Remaining
<u>OPERATING COSTS:</u>				
<u>Administrative Expenditures</u>				
Contracted Services	2,616	14,000	7,618	45.6%
Supplies, Advertising	4,111	1,810	1,124	37.9%
Travel and Training	6,488	8,100	1,537	81.0%
Internal Allocations	9,174	12,290	10,601	13.7%
Other Operating Expenses	10,880	6,560	5,983	8.8%
Total Management Expenditures	33,269	42,760	26,863	37.2%
<u>Operating Expenditures</u>				
Repairs and Maintenance	12,178	38,260	10,866	71.6%
Wharfinger Compensation and Travel	57,559	40,240	16,413	59.2%
Allocations - Operations	4,900	11,000	424	96.1%
Insurance	22,917	27,900	22,917	17.9%
Electricity	1,425	2,860	1,070	62.6%
Supplies	1,461	3,850	638	83.4%
Operating - Other	1,632	3,470	46	98.7%
Total Dock Expenditures	102,071	127,580	52,373	58.9%
<u>CAPITAL / RESERVES</u>				
Transfer to Capital Reserve Fund	192,810	150,590	-	100.0%
TOTAL CAPITAL / RESERVES	192,810	150,590	-	100.0%
TOTAL COSTS	328,150	320,930	79,236	75.3%
<u>FUNDING SOURCES (REVENUE)</u>				
Revenue- Fees	(83,963)	(76,400)	(33,923)	55.6%
Other Income	(3,617)	(2,660)	(4,681)	-76.0%
Requisition - Parcel Tax	(240,570)	(241,870)	-	100.0%
TOTAL REVENUE	(328,150)	(320,930)	(38,604)	88.0%
SURPLUS/(DEFICIT)	-	-	(40,633)	

SGI Harbours Capital Funds

Capital Reserve Fund 1054	<u>2015</u>	<u>2016</u>
Beginning Balance	1,455,919	1,535,905
Transfer from Operating Budget	192,810	-
Transfer to Capital Project Fund	(135,000)	(543,600)
Interest Income	22,176	12,341
Ending Balance \$	1,535,905	1,004,646

Capital Project Fund GSV185016	<u>2015</u>	<u>2016</u>	<u>Total</u>
Beginning Balance	-	25,914	-
Engineering Assessments Project (Budget \$135,000)			
Transfer from Capital Reserve Fund	135,000	-	135,000
CX.103.4501	(109,886)	(15,794)	(125,680)
Infrastructure Engineering Review (Budget \$531,800)			
Transfer from Capital Reserve Fund	-	531,800	531,800
CX.106	-	(17,055)	(17,055)
Horton Bay Dinghy Float (Budget \$6,800)			
Transfer from Capital Reserve Fund	-	6,800	6,800
Piers Island Float (Budget \$5,000)			
Transfer from Capital Reserve Fund	-	5,000	5,000
Interest Income	800	1,704	2,504
Ending Balance \$	25,914	538,369	538,369

**Southern Gulf Island Harbours
Revenues & Expenditures by Dock**

	Revenue			Expenditures			Surplus/(Deficit)		
	<u>Budget</u>	<u>Jan - Jul</u>	<u>% Rem</u>	<u>Budget</u>	<u>Jan - Jul</u>	<u>% Rem</u>	<u>Budget</u>	<u>Jan - Jul</u>	<u>% Rem</u>
Piers Island	3,000	1,609	46.4%	9,500	2,926	69.2%	(6,500)	(1,317)	79.7%
Swartz Bay	5,000	2,477	50.5%	10,770	3,662	66.0%	(5,770)	(1,185)	79.5%
Montague Harbour	5,500	264	95.2%	11,600	3,387	70.8%	(6,100)	(3,124)	48.8%
Sturdies Bay	1,000	-	100.0%	8,130	3,486	57.1%	(7,130)	(3,486)	51.1%
Pt Washington	3,500	1,758	49.8%	10,520	4,881	53.6%	(7,020)	(3,123)	55.5%
Miners Bay	5,500	1,373	75.0%	11,620	7,521	35.3%	(6,120)	(6,148)	-0.5%
Port Browning	16,400	11,298	31.1%	16,900	10,384	38.6%	(500)	914	282.9%
Hope Bay	6,500	1,573	75.8%	11,710	3,557	69.6%	(5,210)	(1,984)	61.9%
Retreat Cove	6,000	2,399	60.0%	11,250	3,370	70.0%	(5,250)	(971)	81.5%
Lyll Harbour	8,500	3,794	55.4%	12,810	4,849	62.1%	(4,310)	(1,055)	75.5%
Horton Bay	8,500	3,832	54.9%	12,770	4,351	65.9%	(4,270)	(519)	87.8%
Total	69,400	30,377	56.2%	127,580	52,373	58.9%	(58,180)	(21,996)	62.2%

14:11:40 Period Ending: July Year: 2016

Print Destination:

Transportation Water

Small Craft Harbour South Gulf Islands

Small Craft Harbour SGI-Admin

	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
1001 General Revenue Fund								
100187 Small Craft Harbor SGI Revenue	(7,000.00)	(7,000.00)	0.00	(3,546.00)	0.00	(3,546.00)	(3,454.00)	49.34
402000 Fees- Licensing	0.00	0.00	0.00	(2,200.00)	0.00	(2,200.00)	2,200.00	0.00
422300 Recovery Cost	(200.00)	(200.00)	0.00	(8.31)	0.00	(8.31)	(191.69)	95.85
429000 Interest Income	(2,470.00)	(2,470.00)	0.00	(2,472.64)	0.00	(2,472.64)	2.64	(0.11)
430000 Grant In Lieu- Federal	(241,860.00)	(241,860.00)	0.00	0.00	0.00	0.00	(241,860.00)	100.00
486010 Requisition- Parcel Tax								
TOTAL Revenue	(251,530.00)	(251,530.00)	0.00	(8,226.95)	0.00	(8,226.95)	(243,303.05)	96.73

TOTAL Small Craft Harbor SGI Reve

TOTAL	(251,530.00)	(251,530.00)	0.00	(8,226.95)	0.00	(8,226.95)	(243,303.05)	96.73
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1001 General Revenue Fund

Small Craft Harbor SGI Admin Expense

	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
100188 Small Craft Harbor SGI Admin Expense								
500280 Wages & Benefits -Other -Regular/Auxili	2,000.00	2,000.00	260.95	874.19	0.00	874.19	1,125.81	56.29
501000 Travel Expenses CRD Business	7,100.00	7,100.00	393.09	1,537.05	0.00	1,537.05	5,562.95	78.35
503130 Contract for Services	12,000.00	12,000.00	0.00	6,735.80	0.00	6,735.80	5,264.20	43.87
505010 Legal Services	0.00	0.00	0.00	8.29	0.00	8.29	(8.29)	0.00
506030 Insurance - Fire	5,400.00	5,400.00	0.00	5,391.41	0.00	5,391.41	8.59	0.16
506050 Insurance - Group Accident	60.00	60.00	0.00	63.25	0.00	63.25	(3.25)	(5.42)
506090 Insurance - Service Contract	300.00	300.00	0.00	295.93	0.00	295.93	4.07	1.36
508270 Purchased Maintenance - Equipment	200.00	200.00	0.00	0.00	0.00	0.00	200.00	100.00
514010 Postage & Freight	100.00	100.00	0.00	0.00	0.00	0.00	100.00	100.00
514030 Advertising	300.00	300.00	70.00	288.58	0.00	288.58	11.42	3.81
514340 Permit Fees	0.00	0.00	0.00	20.00	0.00	20.00	(20.00)	0.00
514400 Staff Training & Development	1,000.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
514880 Meeting Expenses	600.00	600.00	0.00	232.17	0.00	232.17	367.83	61.31
515100 Land Title Costs	200.00	200.00	0.00	39.40	0.00	39.40	160.60	80.30
515150 Printing	300.00	300.00	0.00	67.98	0.00	67.98	232.02	77.34
530010 Alloc.- Finance & Corporate Services	4,730.00	4,730.00	394.16	2,759.12	0.00	2,759.12	1,970.88	41.67
530710 Alloc. - Operations	7,560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
538000 Supplies - Office	0.00	0.00	26.74	26.74	0.00	26.74	(26.74)	0.00
538130 Supplies - Operating	500.00	500.00	0.00	702.09	0.00	702.09	(202.09)	(40.42)
570010 Interest - Internal	410.00	410.00	0.00	6.45	0.00	6.45	403.55	98.43
599010 Cash Short & Over	0.00	0.00	0.00	(27.03)	0.00	(27.03)	27.03	0.00
601001 Labour Consumption	0.00	0.00	1,359.10	7,841.82	0.00	7,841.82	(7,841.82)	0.00
602002 Labour IWS Ops Settlement	0.00	7,560.00	0.00	0.00	0.00	0.00	7,560.00	100.00
TOTAL Expense	42,760.00	42,760.00	2,504.04	26,863.24	0.00	26,863.24	15,896.76	37.18

TOTAL Small Craft Harbor SGI Admi

TOTAL	42,760.00	42,760.00	2,504.04	26,863.24	0.00	26,863.24	15,896.76	37.18
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14:11:40	Period Ending:	July	Year:	2016	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
Print Destination:												
1001	General Revenue Fund											
100198	Small Craft Harbor SGI Transfer own Fund	150,590.00			150,590.00	0.00	0.00	0.00	0.00	0.00	150,590.00	100.00
547040	Transfers to Capital Reserve Fund											
	TOTAL Expense	150,590.00			150,590.00	0.00	0.00	0.00	0.00	0.00	150,590.00	100.00
	TOTAL Small Craft Harbor SGI Tran	150,590.00			150,590.00	0.00	0.00	0.00	0.00	0.00	150,590.00	100.00
	TOTAL Small Craft Harbour SGI-Adm	(58,180.00)			(58,180.00)	2,504.04	18,636.29	0.00	0.00	18,636.29	(76,816.29)	132.03
	Small Craft Harbour SGI-Revenue											
1001	General Revenue Fund											
101548	Small Craft Harbor Revenue Piers Island	(3,000.00)			(3,000.00)	0.00	(1,609.25)	0.00	0.00	(1,609.25)	(1,390.75)	46.36
403200	Fees - Service											
	TOTAL Revenue	(3,000.00)			(3,000.00)	0.00	(1,609.25)	0.00	0.00	(1,609.25)	(1,390.75)	46.36
	TOTAL Small Craft Harbor Revenue	(3,000.00)			(3,000.00)	0.00	(1,609.25)	0.00	0.00	(1,609.25)	(1,390.75)	46.36
1001	General Revenue Fund											
101549	Small Craft Harbor Revenue Swartz Bay	(5,000.00)			(5,000.00)	0.00	(2,476.76)	0.00	0.00	(2,476.76)	(2,523.24)	50.46
403200	Fees - Service											
	TOTAL Revenue	(5,000.00)			(5,000.00)	0.00	(2,476.76)	0.00	0.00	(2,476.76)	(2,523.24)	50.46
	TOTAL Small Craft Harbor Revenue	(5,000.00)			(5,000.00)	0.00	(2,476.76)	0.00	0.00	(2,476.76)	(2,523.24)	50.46
1001	General Revenue Fund											
101550	Small Craft Harbor Revenue Montague Harb	(5,500.00)			(5,500.00)	0.00	(263.58)	0.00	0.00	(263.58)	(5,236.42)	95.21
403200	Fees - Service											
	TOTAL Revenue	(5,500.00)			(5,500.00)	0.00	(263.58)	0.00	0.00	(263.58)	(5,236.42)	95.21
	TOTAL Small Craft Harbor Revenue	(5,500.00)			(5,500.00)	0.00	(263.58)	0.00	0.00	(263.58)	(5,236.42)	95.21
1001	General Revenue Fund											
101551	Small Craft Harbor Revenue Sturdies Bay	(1,000.00)			(1,000.00)	0.00	0.00	0.00	0.00	0.00	(1,000.00)	100.00
403200	Fees - Service											
	TOTAL Revenue	(1,000.00)			(1,000.00)	0.00	0.00	0.00	0.00	0.00	(1,000.00)	100.00
	TOTAL Small Craft Harbor Revenue	(1,000.00)			(1,000.00)	0.00	0.00	0.00	0.00	0.00	(1,000.00)	100.00
1001	General Revenue Fund											
101552	Small Craft Harbor Revenue Pt Washington	(1,000.00)			(1,000.00)	0.00	0.00	0.00	0.00	0.00	(1,000.00)	100.00

14:11:40	Period Ending: July	Year: 2016	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
Print Destination:										
403200	Fees - Service		(3,500.00)	(3,500.00)	0.00	(1,758.20)	0.00	(1,758.20)	(1,741.80)	49.77
	TOTAL Revenue		(3,500.00)	(3,500.00)	0.00	(1,758.20)	0.00	(1,758.20)	(1,741.80)	49.77
TOTAL	Small Craft Harbor Revenue		(3,500.00)	(3,500.00)	0.00	(1,758.20)	0.00	(1,758.20)	(1,741.80)	49.77
1001	General Revenue Fund									
101553	Small Craft Harbor Revenue Miners Bay		(5,500.00)	(5,500.00)	0.00	(1,372.85)	0.00	(1,372.85)	(4,127.15)	75.04
403200	Fees - Service		(5,500.00)	(5,500.00)	0.00	(1,372.85)	0.00	(1,372.85)	(4,127.15)	75.04
	TOTAL Revenue		(5,500.00)	(5,500.00)	0.00	(1,372.85)	0.00	(1,372.85)	(4,127.15)	75.04
TOTAL	Small Craft Harbor Revenue		(5,500.00)	(5,500.00)	0.00	(1,372.85)	0.00	(1,372.85)	(4,127.15)	75.04
1001	General Revenue Fund									
101554	Small Craft Harbor Revenue Port Browning		(16,400.00)	(16,400.00)	0.00	(11,298.42)	0.00	(11,298.42)	(5,101.58)	31.11
403200	Fees - Service		(16,400.00)	(16,400.00)	0.00	(11,298.42)	0.00	(11,298.42)	(5,101.58)	31.11
	TOTAL Revenue		(16,400.00)	(16,400.00)	0.00	(11,298.42)	0.00	(11,298.42)	(5,101.58)	31.11
TOTAL	Small Craft Harbor Revenue		(16,400.00)	(16,400.00)	0.00	(11,298.42)	0.00	(11,298.42)	(5,101.58)	31.11
1001	General Revenue Fund									
101555	Small Craft Harbor Revenue Hope Bay Dock		(6,500.00)	(6,500.00)	0.00	(1,573.36)	0.00	(1,573.36)	(4,926.64)	75.79
403200	Fees - Service		(6,500.00)	(6,500.00)	0.00	(1,573.36)	0.00	(1,573.36)	(4,926.64)	75.79
	TOTAL Revenue		(6,500.00)	(6,500.00)	0.00	(1,573.36)	0.00	(1,573.36)	(4,926.64)	75.79
TOTAL	Small Craft Harbor Revenue		(6,500.00)	(6,500.00)	0.00	(1,573.36)	0.00	(1,573.36)	(4,926.64)	75.79
1001	General Revenue Fund									
101556	Small Craft Harbor Revenue Retreat Cove		(6,000.00)	(6,000.00)	0.00	(2,398.82)	0.00	(2,398.82)	(3,601.18)	60.02
403200	Fees - Service		(6,000.00)	(6,000.00)	0.00	(2,398.82)	0.00	(2,398.82)	(3,601.18)	60.02
	TOTAL Revenue		(6,000.00)	(6,000.00)	0.00	(2,398.82)	0.00	(2,398.82)	(3,601.18)	60.02
TOTAL	Small Craft Harbor Revenue		(6,000.00)	(6,000.00)	0.00	(2,398.82)	0.00	(2,398.82)	(3,601.18)	60.02
1001	General Revenue Fund									
101557	Small Craft Harbor Revenue Iyall Harbour		(8,500.00)	(8,500.00)	0.00	(3,793.88)	0.00	(3,793.88)	(4,706.12)	55.37
403200	Fees - Service		(8,500.00)	(8,500.00)	0.00	(3,793.88)	0.00	(3,793.88)	(4,706.12)	55.37
	TOTAL Revenue		(8,500.00)	(8,500.00)	0.00	(3,793.88)	0.00	(3,793.88)	(4,706.12)	55.37
TOTAL	Small Craft Harbor Revenue		(8,500.00)	(8,500.00)	0.00	(3,793.88)	0.00	(3,793.88)	(4,706.12)	55.37

14:11:40	Period Ending:	July	Year:	2016	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
Print Destination:												
100191	Small Craft Harbor SGI Montague	500.00			500.00		0.00	11.38	0.00	11.38	488.62	97.72
501000	Travel Expenses CRD Business	2,480.00			2,480.00		0.00	2,083.33	0.00	2,083.33	396.67	15.99
506010	Insurance - Public Liability	2,650.00			2,650.00		0.00	884.00	0.00	884.00	1,766.00	66.64
508250	Purchased Maintenance - Eng Structures	1,000.00			1,000.00		0.00	0.00	0.00	0.00	1,000.00	100.00
509010	Contracted Services	360.00			360.00		0.00	0.00	0.00	0.00	360.00	100.00
514040	Signs	2,750.00			2,750.00		0.00	71.92	0.00	71.92	2,678.08	97.38
515260	Compensation Costs	1,000.00			1,000.00		0.00	0.00	0.00	0.00	0.00	0.00
530710	Alloc. - Operations	510.00			510.00		0.00	303.45	0.00	303.45	206.55	40.50
535090	Electricity	250.00			250.00		0.00	28.60	0.00	28.60	221.40	88.56
538130	Supplies - Operating	100.00			100.00		0.00	4.72	0.00	4.72	95.28	95.28
538420	Supplies - Safety & Emergency	0.00			0.00		0.00	0.00	0.00	0.00	1,000.00	100.00
602002	Labour IWS Ops Settlement											
	TOTAL Expense	11,600.00			11,600.00		0.00	3,387.40	0.00	3,387.40	8,212.60	70.80
	TOTAL Small Craft Harbor SGI Mont	11,600.00			11,600.00		0.00	3,387.40	0.00	3,387.40	8,212.60	70.80
1001	General Revenue Fund											
100192	Small Craft Harbor SGI Sturdies	500.00			500.00		0.00	11.74	0.00	11.74	488.26	97.65
501000	Travel Expenses CRD Business	2,480.00			2,480.00		0.00	2,083.33	0.00	2,083.33	396.67	15.99
506010	Insurance - Public Liability	2,000.00			2,000.00		0.00	1,052.14	0.00	1,052.14	947.86	47.39
508250	Purchased Maintenance - Eng Structures	1,000.00			1,000.00		267.20	267.20	0.00	267.20	732.80	73.28
509010	Contracted Services	300.00			300.00		0.00	0.00	0.00	0.00	300.00	100.00
514040	Signs	500.00			500.00		0.00	0.60	0.00	0.60	499.40	99.88
515260	Compensation Costs	1,000.00			1,000.00		0.00	0.00	0.00	0.00	0.00	0.00
530710	Alloc. - Operations	250.00			250.00		37.09	65.69	0.00	65.69	184.31	73.72
538130	Supplies - Operating	100.00			100.00		0.00	4.86	0.00	4.86	95.14	95.14
538420	Supplies - Safety & Emergency	0.00			0.00		0.00	0.00	0.00	0.00	1,000.00	100.00
602002	Labour IWS Ops Settlement											
	TOTAL Expense	8,130.00			8,130.00		304.29	3,485.56	0.00	3,485.56	4,644.44	57.13
	TOTAL Small Craft Harbor SGI Stur	8,130.00			8,130.00		304.29	3,485.56	0.00	3,485.56	4,644.44	57.13
1001	General Revenue Fund											
100193	Small Craft Harbor SGI Port Washington	500.00			500.00		0.00	0.00	0.00	0.00	500.00	100.00
501000	Travel Expenses CRD Business	2,480.00			2,480.00		0.00	2,083.33	0.00	2,083.33	396.67	15.99
506010	Insurance - Public Liability	2,890.00			2,890.00		0.00	716.07	0.00	716.07	2,173.93	75.22
508250	Purchased Maintenance - Eng Structures	1,000.00			1,000.00		249.39	249.39	0.00	249.39	750.61	75.06
509010	Contracted Services	300.00			300.00		0.00	0.00	0.00	0.00	300.00	100.00
514040	Signs	1,750.00			1,750.00		265.77	898.83	0.00	898.83	851.17	48.64
515260	Compensation Costs	1,000.00			1,000.00		0.00	0.00	0.00	0.00	0.00	0.00
530710	Alloc. - Operations	250.00			250.00		0.00	120.64	0.00	120.64	129.36	51.74
535090	Electricity	250.00			250.00		0.00	9.52	0.00	9.52	240.48	96.19
538130	Supplies - Operating	100.00			100.00		0.00	17.81	0.00	17.81	82.19	82.19
538420	Supplies - Safety & Emergency	0.00			0.00		0.00	361.13	0.00	361.13	(361.13)	0.00
600007	Contract for Services Clearing											
602002	Labour IWS Ops Settlement	0.00			0.00		0.00	424.00	0.00	424.00	576.00	57.60

14:11:40	Period Ending: July	Year: 2016	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
Print Destination:										
TOTAL	Expense		10,520.00	10,520.00	515.16	4,880.72	0.00	4,880.72	5,639.28	53.61
TOTAL	Small Craft Harbor SGI Port		10,520.00	10,520.00	515.16	4,880.72	0.00	4,880.72	5,639.28	53.61
1001	General Revenue Fund									
100194	Small Craft Harbor SGI Miners Bay									
501000	Travel Expenses CRD Business		500.00	500.00	575.00	575.00	0.00	575.00	(75.00)	(15.00)
506010	Insurance - Public Liability		2,480.00	2,480.00	0.00	2,083.33	0.00	2,083.33	396.67	15.99
508250	Purchased Maintenance - Eng Structures		2,630.00	2,630.00	70.00	2,595.75	0.00	2,595.75	34.25	1.30
509010	Contracted Services		1,000.00	1,000.00	391.89	1,106.96	0.00	1,106.96	(106.96)	(10.70)
514040	Signs		300.00	300.00	0.00	0.00	0.00	0.00	300.00	100.00
515260	Compensation Costs		2,750.00	2,750.00	287.81	708.86	0.00	708.86	2,041.14	74.22
530710	Alloc. - Operations		1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
535090	Electricity		610.00	610.00	0.00	202.74	0.00	202.74	407.26	66.76
538130	Supplies - Operating		250.00	250.00	0.00	230.18	0.00	230.18	19.82	7.93
538420	Supplies - Safety & Emergency		100.00	100.00	0.00	17.81	0.00	17.81	82.19	82.19
602002	Labour IWS Ops Settlement		0.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
TOTAL	Expense		11,620.00	11,620.00	1,324.70	7,520.63	0.00	7,520.63	4,099.37	35.28
TOTAL	Small Craft Harbor SGI Mine		11,620.00	11,620.00	1,324.70	7,520.63	0.00	7,520.63	4,099.37	35.28
1001	General Revenue Fund									
100195	Small Craft Harbor SGI Port Browning									
501000	Travel Expenses CRD Business		500.00	500.00	0.00	0.00	0.00	0.00	500.00	100.00
506010	Insurance - Public Liability		2,480.00	2,480.00	0.00	2,083.33	0.00	2,083.33	396.67	15.99
508250	Purchased Maintenance - Eng Structures		2,630.00	2,630.00	1,070.38	2,286.03	0.00	2,286.03	343.97	13.08
509010	Contracted Services		1,000.00	1,000.00	231.57	231.57	0.00	231.57	768.43	76.84
514010	Postage & Freight		0.00	0.00	10.17	10.17	0.00	10.17	(10.17)	0.00
514040	Signs		300.00	300.00	0.00	0.00	0.00	0.00	300.00	100.00
515260	Compensation Costs		8,640.00	8,640.00	909.54	5,750.32	0.00	5,750.32	2,889.68	33.45
530710	Alloc. - Operations		1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
538130	Supplies - Operating		250.00	250.00	0.00	4.76	0.00	4.76	245.24	98.10
538420	Supplies - Safety & Emergency		100.00	100.00	0.00	17.81	0.00	17.81	82.19	82.19
602002	Labour IWS Ops Settlement		0.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
TOTAL	Expense		16,900.00	16,900.00	2,221.66	10,383.99	0.00	10,383.99	6,516.01	38.56
TOTAL	Small Craft Harbor SGI Port		16,900.00	16,900.00	2,221.66	10,383.99	0.00	10,383.99	6,516.01	38.56
1001	General Revenue Fund									
100196	Small Craft Harbor SGI Hope Bay									
501000	Travel Expenses CRD Business		500.00	500.00	0.00	0.00	0.00	0.00	500.00	100.00
503130	Contract for Services		0.00	0.00	8.54	8.54	0.00	8.54	(8.54)	0.00
506010	Insurance - Public Liability		2,870.00	2,870.00	0.00	2,083.33	0.00	2,083.33	786.67	27.41
508250	Purchased Maintenance - Eng Structures		2,240.00	2,240.00	0.00	210.85	0.00	210.85	2,029.15	90.59
509010	Contracted Services		1,000.00	1,000.00	195.95	389.35	0.00	389.35	610.65	61.07
514040	Signs		300.00	300.00	0.00	0.00	0.00	0.00	300.00	100.00

Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
14:11:40 Period Ending: July Year: 2016							
515260 Compensation Costs	3,250.00	447.40	800.75	0.00	800.75	2,449.25	75.36
530710 Alloc. - Operations	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
535090 Electricity	200.00	0.00	35.56	0.00	35.56	164.44	82.22
538130 Supplies - Operating	250.00	0.00	28.85	0.00	28.85	221.15	88.46
538420 Supplies - Safety & Emergency	100.00	0.00	0.00	0.00	0.00	100.00	100.00
602002 Labour IWS Ops Settlement	0.00	0.00	0.00	0.00	0.00	1,000.00	100.00
TOTAL Expense	11,710.00	651.89	3,557.23	0.00	3,557.23	8,152.77	69.62
TOTAL Small Craft Harbor SGI Hope	11,710.00	651.89	3,557.23	0.00	3,557.23	8,152.77	69.62
General Revenue Fund							
100197 Small Craft Harbor SGI Retreat Cove	500.00	0.00	11.38	0.00	11.38	488.62	97.72
501000 Travel Expenses CRD Business	2,480.00	0.00	2,083.34	0.00	2,083.34	396.66	15.99
506010 Insurance - Public Liability	2,620.00	0.00	0.00	0.00	0.00	2,620.00	100.00
508250 Purchased Maintenance - Eng Structures	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
509010 Contracted Services	300.00	0.00	0.00	0.00	0.00	300.00	100.00
514040 Signs	3,000.00	448.39	1,224.34	0.00	1,224.34	1,775.66	59.19
515260 Compensation Costs	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
530710 Alloc. - Operations	250.00	0.00	28.61	0.00	28.61	221.39	88.56
538130 Supplies - Operating	100.00	0.00	22.53	0.00	22.53	77.47	77.47
538420 Supplies - Safety & Emergency	0.00	0.00	0.00	0.00	0.00	1,000.00	100.00
602002 Labour IWS Ops Settlement	0.00	0.00	0.00	0.00	0.00	1,000.00	100.00
TOTAL Expense	11,250.00	448.39	3,370.20	0.00	3,370.20	7,879.80	70.04
TOTAL Small Craft Harbor SGI Retr	11,250.00	448.39	3,370.20	0.00	3,370.20	7,879.80	70.04
General Revenue Fund							
101547 Small Craft Harbor SGI Lyall Harbour	300.00	0.00	0.00	0.00	0.00	300.00	100.00
501000 Travel Expenses CRD Business	2,480.00	0.00	2,083.34	0.00	2,083.34	396.66	15.99
506010 Insurance - Public Liability	2,620.00	0.00	456.55	0.00	456.55	2,163.45	82.57
508250 Purchased Maintenance - Eng Structures	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
509010 Contracted Services	0.00	0.00	35.67	0.00	35.67	(35.67)	0.00
514010 Postage & Freight	300.00	0.00	0.00	0.00	0.00	300.00	100.00
514040 Signs	4,250.00	419.62	1,930.88	0.00	1,930.88	2,319.12	54.57
515260 Compensation Costs	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
530710 Alloc. - Operations	510.00	0.00	244.57	0.00	244.57	265.43	52.05
535090 Electricity	250.00	0.00	79.91	0.00	79.91	170.09	68.04
538130 Supplies - Operating	100.00	0.00	17.81	0.00	17.81	82.19	82.19
538420 Supplies - Safety & Emergency	0.00	0.00	0.00	0.00	0.00	1,000.00	100.00
602002 Labour IWS Ops Settlement	0.00	0.00	0.00	0.00	0.00	1,000.00	100.00
TOTAL Expense	12,810.00	419.62	4,848.73	0.00	4,848.73	7,961.27	62.15
TOTAL Small Craft Harbor SGI Lyal	12,810.00	419.62	4,848.73	0.00	4,848.73	7,961.27	62.15
General Revenue Fund							
1001							

14:11:40 Period Ending: July Year: 2016

Print Destination:

	Original Budget	Revised Budget	Current	Period to Date	Encumbrance	Total	Budget Remaining \$	Budget Remaining %
101962 Small Craft Harbor SGI Horton	300.00	300.00	0.00	0.00	0.00	0.00	300.00	100.00
501000 Travel Expenses CRD Business	2,480.00	2,480.00	0.00	2,083.34	0.00	2,083.34	396.66	15.99
506010 Insurance - Public Liability	2,470.00	2,470.00	199.34	199.34	0.00	199.34	2,270.66	91.93
508250 Purchased Maintenance - Eng Structures	1,000.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
509010 Contracted Services	410.00	410.00	0.00	0.00	0.00	0.00	410.00	100.00
514040 Signs	4,250.00	4,250.00	647.74	1,955.17	0.00	1,955.17	2,294.83	54.00
515260 Compensation Costs	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
530710 Alloc. - Operations	510.00	510.00	0.00	90.31	0.00	90.31	419.69	82.29
535090 Electricity	250.00	250.00	0.00	4.76	0.00	4.76	245.24	98.10
538130 Supplies - Operating	100.00	100.00	0.00	17.81	0.00	17.81	82.19	82.19
538420 Supplies - Safety & Emergency	0.00	1,000.00	0.00	0.00	0.00	0.00	1,000.00	100.00
602002 Labour IWS Ops Settlement								
TOTAL Expense	12,770.00	12,770.00	847.08	4,350.73	0.00	4,350.73	8,419.27	65.93
TOTAL Small Craft Harbor SGI Hort	12,770.00	12,770.00	847.08	4,350.73	0.00	4,350.73	8,419.27	65.93
TOTAL Small Craft Harbour SGI-Exp	127,580.00	127,580.00	7,402.43	52,373.06	0.00	52,373.06	75,206.94	58.95
TOTAL Small Craft Harbour South Gul	0.00	0.00	9,906.47	40,632.59	0.00	40,632.59	(40,632.59)	0.00
TOTAL Transportation Water	0.00	0.00	9,906.47	40,632.59	0.00	40,632.59	(40,632.59)	0.00

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR
INSPECTION REPORT FOR MONTH OF JULY, 2016

MONTAGUE HARBOUR DOCK, GALIANO ISLAND – JULY 27, 2016

At this inspection I met with the Wharfinger, Suzanne Laughlin, and discussed any concerns.

Approach/Wharfhead

This approach leads directly to the gangway, and holds the notice board and fire extinguisher.

Decking – Decking and associated timbers are in good condition.

Railings – boards are in good physical condition, but require cleaning and painting.

Gangway

Two wooden rail members are sound, but require cleaning and painting.

Metal non-skid mesh and treads are in good condition.

Roller and bed are operating satisfactorily, but one steel guide is off and both guides are very rusty and require replacement, along with two associated 2 x 4 boards. Metal guides measure 8 feet x 3 x 2 inches.

Float 'A'

This float is accessed directly from the gangway, and is joined in a 'T' formation to float 'B' this float is anchored by chains and anchors, which were not inspected. A life ring/heaving line and overhead light is located on this float. One section of this float is designated as dinghys only. Presently there are approximately 20 dinghys here. I added one more 'dinghys only' sign, for a total of three signs.

Decking – all decking boards and associated timbers, including rub boards are in good condition.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner. The measurements are similar to my May inspection. They are:

NW – 21 inches SW – 13 inches NE – 14 inches SE – 14 inches

As noted, there is a difference in heights between the NW and SW corners. This is under the gangway foot, and due partially to the weight of this gangway, and will be monitored.

Float 'B'

This float is joined to the mid-section of float 'A' in a 'T' formation. It is anchored in place via chains and plates with tires in between. This appears in good condition. One overhead light is located on this float.

Decking – all decking boards and associated timbers, including rub rails are in good condition.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements – are the same as my May inspection. They are:

NW – 15 inches NE – 18 inches SW – 18 inches SE – 19 inches

Piles and wells – there are two interior pile wells at each end of this float. The well on the north-west corner requires a replacement of one 2 x 10 x 8 foot rub strip, as it is quite worn. The remaining piles and wells are in good condition. The two northern sets of piles are leaning substantially, but I note this has been the case for many years.

Float 'C'

This is joined to the end of float 'B' and runs in an east to west direction. It is anchored in place with two single steel piles. This is mostly used as the loading zone/emergency access float.

Decking – all decking and associated timbers, including rub rails appear in good condition.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements – from each corner are similar to my May inspection. They are:

NE – 18 inches SE – 18 inches NW – 17 inches SW – 16 inches

Float 'D'

This float is attached to the west end of float 'C'. And is used primarily as a float plane dock. This float has an emergency boarding ladder.

Decking – all decking and associated timbers, including rub rails appear in good condition.

Floatation – there is a substantial difference in floatation measurements here, and one or more floatation boxes appear to be faulty. Floatation boxes should be replaced.

Float freeboard measurements – from each corner are: (same as my May inspection)

SE – 15 inches SW – 9 inches NE – 16 inches NW – 9 inches

Safety and Signage

Ladders – one ladder was located on the outside of float 'D'. Suzanne and i agree there should be one additional ladder located on float 'A' or 'B'

Fire extinguishers – there is one fire extinguisher, located at the notice board. Last service date is October, 2014. I did not have a serviced fire extinguisher at this time, in order to update the present one. This will be done during my next visit to Galiano.

Life rings/heaving lines – these are located on float 'A', on the light post, and are in good condition

Lighting – there is overhead lights on floats 'A' and 'B'.

Signage – all appear in good and readable condition. Emergency/loading zone area on float 'C' is well painted in yellow. No recommendations on this item. Two 'dinghy only' signs were placed at time of this inspection.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Suzanne Laughlin. Also items to be monitored.

These items are contained in the following 'schedule A'.

SCHEDULE 'A'

MONTAGUE HARBOURS DOCK, GAILIANO ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 28, 2016

Items requiring outside contractor

Float 'D' floatation billets to be replaced.

Items to be carried out by Al Cannon or wharfinger, Suzanne Laughlin

Steel roller guide under gangway to be replaced. Also two associated timbers - 2 x 4 x 8 feet to be replaced. Guides measure 8 feet x 2 inches x 3 inches.

Railings on wharfhead and gangway require cleaning and painting. This should be done in the late spring.

Fire extinguisher to be serviced.

One additional ladder to be installed on either float 'A' or 'B'.

Items to be monitored

2 x 10 rub strip in pile well at north end of float 'B' is worn, but not requiring replacement as of this inspection.

Note:

Above work and procurement items are my suggestions only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w. Cannon

Dock Operations Coordinator

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

RETREAT COVE DOCK, GALIANO ISLAND – JULY 28, 2016

At this inspection I spoke with wharfinger, Kiyo Okuda, and went over any concerns he had.

Approach

This approach is a 'walk-on' approach only. It leads to a small wharfhead, to which the gangway is attached. A metal grating should be installed at the approach entrance – to deflect water and debris from running onto approach decking.

Decking – appears in good useable and safe condition.

Railings – all in good physical condition, but require wire brushing and painting.

Wharfhead

A small wharfhead, leading to gangway.

The notice board, on this wharfhead has some rot, and requires repairs and painting. I installed new updated moorage rate information sheets here at this inspection.

Decking – all in good condition

Railings - all in good condition

Gangway

In good condition, but has extensive rust on certain structural members. Non-skid wire mesh and treads are in good condition. Gangway roller and bed appear in good condition. Both metal roller guides are rusted out, and should be replaced. There is no metal apron on the gangway, but appears not to be a concern.

Float 'A'

This is the only float here, and is built to Transport Canada specifications. It is anchored by two sets of interior piles at the north end, and two sets of exterior piles at the south end.

Decking – appears in good condition, but requires re-nailing to approx. half of the deck boards.

Floatation – all floatation boxes appear in good condition

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water level to top of stringer timber at each corner. They are similar to my May inspection. They are:

NE – 19 inches

NW – 18 inches

SE – 18 inches

SW – 18 inches

Piles and wells – all appear in good condition, with adequate rub strips in each.

Safety and Signage

Ladders – one ladder is located on the float.

Fire extinguishers – one is located at the notice board, and was serviced in April, 2016.

Life rings/heaving lines – the float has a life ring and heaving line in good condition.

Lighting – there is no power to this dock, so no lights.

Signage – there is good signage, both on the small wharfhead and also one facing towards the sea – good for approaching boaters. Other signs appear in good, clean condition.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Kiyo Okuda. The repair items are included in the following 'schedule A'.

SCHEDULE 'A'

RETREAT COVE DOCK, GALIANO ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 28, 2016

Items requiring outside contractor

Metal grating to be acquired and installed at 'approach' entrance. Length of decking for this purpose is 59 inches.

Items to be carried out by Al Cannon or Wharfinger, Kiyo Okuda

Notice board has some rot, and requires repairs and painting.

Metal roller guides to be acquired and installed. Measurements are 4 x 2 inches x 10 feet in length.

Deck boards on Float require re-nailing.

Approach railings require brushing and painting.

Note:

Above work and procurement items are my suggestions only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w. Cannon

Dock Operations Coordinator

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIONS COORDINATOR
INSPECTION REPORT FOR MONTH OF JULY, 2016

STURDIES BAY DOCK, GALIANO ISLAND – JULY 28, 2016

At this inspection, I met with wharfinger, Suzanne Laughlin, and discussed any concerns for this dock.

Approach/Wharfhead

This approach is a 'walk on' only, as it has a permanent steel barricade to prevent any vehicular traffic. The approach holds the notice board and fire extinguisher. On July 5th I installed new, updated moorage rate notices and also a newly serviced fire extinguisher. The wharfhead has one overhead light.

Decking – all decking and related timbers are in good condition.

Railings – all railings and guard rails are in good condition.

Gangway

All metal, including railings is in good condition. Roller, bed and guides are all in good condition. Metal mesh apron and slider is in good operable condition. On July 5th I removed the old metal non-skid mesh on this gangway, and replaced with new material. One wooden tread is missing, and requires replacing.

Float 'A'

This is the only float at this dock, and is anchored in place by four sets of piles, with six piles in each well. All wells have good composite rub strips, and are in good condition.

Decking – all decking and related timbers are in good condition. This float has recently been pressure washed, and duroid roof shingles installed the length of the float, for non-skid purposes. Many deck boards over the length of the float require re-nailing or screwing.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner, (they are similar to my May inspection). They are:

NW – 14 inches

NE – 14 inches

SW – 16 inches

SE – 15 inches

Safety and Signage

Ladders – there are no ladders on this float, and one should be installed.

Fire extinguishers - one fire extinguisher is on the notice board on the approach, and was recently serviced.

Life rings/heaving lines – one set is located on the light post on float 'A' and is in good condition.

Lighting – two lights – one light on float 'A' has been repaired earlier this year, but I'm not sure if the light on the wharfhead is operating.

Signage – all signs are in good and readable condition. No recommendations here. The loading/emergency zone is painted yellow, and is due for re-painting. One 'loading zone only' sign is in place along the yellow painted section.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Suzanne Laughlin. Also a list of wharfinger concerns. The repair items are included in the following 'schedule A'.

SCHEDULE 'A'

STURDIES BAY DOCK, GALIANO ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 28, 2016

Items requiring outside contractor

One rub (bull) rail at the loading zone area is broken, and requires replacement. It is not dangerous or causing a safety issue presently, but should be replaced soon. It appears to have been hit at some time.

Items to be carried out by Al Cannon or wharfinger, Suzanne Laughlin

Notice board requires cleaning.

Supply and install one wooden tread on gangway. Measures 2 x 3 x 13 inches.

Procure and install one boarding ladder.

Loading zone requires yellow painting.

Items of concern by wharfinger, Suzanne Loughlin

Nil

Note:

Above work and procurement items are my suggestion only. To be authorized by CRD and/or SGI Harbours Commission.

End of my inspection

Respectfully,

Alan w. Cannon.

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

LYALL HARBOUR DOCK, SATURNA ISLAND – JULY 30, 2016

At this inspection I met with the Wharfinger, Katie Dentry, and went over any concerns she has with this dock.

Approach/Wharfhead

This approach leads directly to the gangway, and holds the notice board and fire extinguisher. One overhead newer model light is located near the top of the gangway. One pile on the approach has its aluminum capping missing. To be replaced.

There is also a spill kit near the notice board. We require additional absorbent pads for this kit. It has a roll of booming material, which is in good condition.

Decking – This wharfhead is all concrete decking with large timber guard rails. All in very good condition.

Gangway

Is constructed of all galvanized metal, with metal grating throughout. It is forty-eight feet in length, with a metal mesh apron.

Roller and bed are operating satisfactorily. Metal mesh apron at bottom is operating satisfactorily. The wharfinger advises this gangway is slippery and dangerous at low tides. Requires sheets of non-skid metal attached for full length. Saturna Island Commissioner, Larry Peck has advised that the present tread on this gangway should be moved to the other side, and this should alleviate the slippery condition here. On this inspection, I found this may help, but would contribute very little to the slipperiness. I suggest that new non-skid metal mesh be installed, as in other gangways.

Float 'A'

This float is accessed directly from the gangway, and is joined to float 'B' via transition timbers, at a slight angle.

Decking – all decking boards and associated timbers, including rub boards are in good condition.

Piles and Wells – it is anchored via exterior piles – no wells – with two piles on each corner at its west end, and anchored to float 'B' at its east end.

Floatation – Former floatation boxes that were breaking up have been replaced, so this float is now back to satisfactory levels.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner, and are: (similar to my May inspection)

NW – 7 inches SW – 6 inches NE – 9 inches SE – 9 inches

Float 'B'

This float is anchored to float 'C' via chains and a large metal transition plate, with metal strips under.

There is an overhead light on this float, as well as a life ring and line.

The loading zone is at this float, which is signed and good yellow paint.

Decking – all decking boards and associated timbers, including rub boards are in good condition.

Piles and Wells - it is anchored via two steel piles in interior wells. These wells require new composite rub strips, as there is wooden ones present, and showing wear.

Floatation – all floatation boxes appear in fair condition there are a number of small blue plastic boxes under this float, as well as fiber-glassed wooden boxes. Float freeboard measurements – from each corner are: (same as my May inspection.)

NE – 11 inches SE – 10 inches NW – 9.5 inches SW – 9 inches

Float 'C'

This float is joined to the end of float 'B' and runs in an east to west direction.

This float holds the floatplane loading zone at its far-east end. It is well painted with one sign showing seaward on the outside of the guard rail.

It also has one overhead light, and a life ring here.

The pilots have requested we add missing tires to the outside of this float. There are about 5 missing now. Former wharfinger Patrick has advised he will replace these, at no charge, with tires from the inside of the float, which are not required.

Decking – all decking and associated timbers, including rub rails appear in good condition.

Piles and Wells – it is anchored via four interior piles wells, with four piles in each well. All composite rub strips are in good condition.

Floatation – there is a number of smaller blue plastic floatation boxes here, and most are fiber glassed wooden boxes. This float is riding higher than float 'B'.

Float freeboard measurements – from each corner are: (same as my May inspection)

NE – 18 inches

SE – 19 inches

NW – 11 inches

SW – 12 inches

Safety and Signage

Ladders – there are no ladders at this dock. At least one is required.

Fire extinguishers – there is one fire extinguisher, located at the notice board. This was serviced during my May inspection.

Life rings/heaving lines – there is a life ring and line on float 'B', and on float 'C'.

Lighting – overhead lighting is at the gangway top, and also on floats 'B' and 'C'.

Signage – all appear in good and readable condition. Emergency/loading zone area on float 'B' and float 'C' is well painted in yellow. New updated moorage rate notices have been recently installed on the Notice Board.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger. Also items of concern and/or requests by the wharfinger. Also items to be monitored. The repair items are contained in the following Schedule 'A'.

Note:

The procurement and repair items listed are my suggestions only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w. Cannon

Dock Operations Coordinator

SCHEDULE 'A'

LYALL HARBOUR DOCK, SATURNA ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 30, 2016

Items requiring outside contractor

None at this time.

Items to be carried out by Al Cannon or Wharfinger, Katie Dentry

New composite rub strips required in pile wells on float 'B'. Measurements are:

18 inches x 6 inches. 8 in total. Plus one 2 x 4 lumber at 26 inches, as backing on one pile well.

At least one ladder to be acquired and installed. These are on order, according to information at the May 27th Harbours Commission meeting.

Aluminum capping required for one pile on approach. One sheet approx. 3 feet x 3 feet.

Oil Spill Kit requires additional pads.

"Slippery" signage to be installed at top of gangway.

Approximately five tires to be added to outside of Float Plane dock.

Items of concern by the wharfinger Katie Dentry.

Gangway is slippery and requires non-skid metal mesh. Measurements are:

48 feet x 22 inches wide. Plus 2 ½ x 3/16 inch bolts (total of 48) plus 1 ½ inch diameter washers (total of 96) This will require two people plus a dinghy to install. See information above, under 'Gangway'

Items to be monitored

None at this time.

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

HORTON BAY DOCK, MAYNE ISLAND – JULY 27TH, 2016

At this inspection I did not meet with the wharfinger, Richard Jarco, as he is away for few days.

Approach

This approach is a 'walk-on' approach only. It leads directly to the gangway and floats.

Notice board, near top of gangway, requires cleaning and painting. It is quite dirty. One fire extinguisher is located on the notice board. This was serviced in April, 2016.

Decking – all is useable and fairly safe condition, except the first thirty-three feet requires pressure washing, as it is covered with gravel, dirt and algae. This portion is covered with non-skid metal sheeting. A metal grate similar to other docks is required at the entrance here, to divert water and debris from running onto the decking. See schedule 'A' for further details.

Railings – all in good condition, but has build-up of algae, and requires scraping and/or wire brushing, cleaning and painting.

Gangway

Gangway is in fair physical condition, as the rails, supports and top rail, all metal are very rusty, and require grinding down, wire brushing and painting. The gangway decking requires wire brushing and cleaning, as there is a build-up of algae, grass etc. Two 2 x 12 x 36 feet boards under wood treads are showing signs of rot, and should be replaced soon. To monitor this item. Gangway roller and roller bed is in good condition. New metal non-skid mesh is required here, as present material is older, and of poor quality.

Float 'A'

This float is made up of two original floats, and is joined end to end with timbers, so there is no movement or swinging between the two original floats. This float is the first of two floats, which are joined in a 'T' configuration. Each end of this float is anchored via two sets of interior piles at the north end, and two sets of exterior piles at the south end.

Decking – all decking and associated timbers, including rub rails appear in good and safe condition.

Floatation – floatation boxes appear to have some leakage, as this float is lower on the west side, as the following measurements show.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change. There are also measurements taken in the mid-point of this float

Measurements are taken from water height to top of stringer timbers at each corner, and are: (similar to inspection of May, 2016)

NE – 9 inches NW – 8 inches SE – 17 inches SW – 12 inches (low)

NE and NW measurements taken just south of pile wells.

Midpoint measurements are: East side – 12 inches West side – 9 inches (low)

Piles and wells – appear in good condition, including composite rub strips.

Dinghy Dock - A new dinghy dock has recently been added. It is attached to the south end of Float 'A', under the gangway. It measures 24 x 8 feet. It is presently attached to Float 'A' via two ropes.

Float 'B'

This float is joined to float 'A' via chains and plates in a 'T' configuration. These chains and plates are in good condition. There are two sheets of wire mesh on this float that should be replaced with better quality material.

Decking – all decking and associated timbers appear in good condition.

Floatation – all floatation boxes appear in good condition.

Measurements are taken from water height to top of stringer timbers at each corner. They are: (similar to inspection of May, 2016)

NE – 13 inches NW – 12 inches SE – 10 inches SW – 10 inches

Safety and Signage

Ladders – no ladders were visible and this should be addressed. I suggest one to be installed at one of the ends of float 'b' in this way it will not be interfered with by any moored boats.

Fire extinguishers – there are three extinguishers at this dock, and the two on the floats appear in fairly new condition. There is also one on the approach on the notice board. This was serviced in April, 2016. No service dates on the other two, although they appear quite new.

Life rings/heaving lines - one on float 'A' appears in good condition.

Lighting – one light at top of gangway, and no lights on either float.

Signage – all signs appear in good and readable condition. These signs are mostly dept. Of fisheries signs, and I assume these will stay until CRD becomes the owner of this dock. No recommendations on this item. The loading zone has two '15 minutes loading zone only' signs, and yellow paint is in good condition. At this inspection I installed new updated moorage rate notices on the Notice Board.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Richard Jarco. Also items to monitor. The repair items are contained in the following schedule 'A'.

SCHEDULE 'A'

HORTON BAY DOCK, MAYNE ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT OF JULY 27, 2016.

Items requiring outside contractor

Metal grating to be supplied and installed at entrance to approach. Measurements here are: 6 feet in width. Deck boards are 11 ½ inches wide.

First 33 feet of approach and part of gangway decking to be pressure washed.

Items to be carried out by Al Cannon or wharinger, Richard Jarco

Notice board requires cleaning and painting. Very dirty.

Remove old and install new metal non-skid mesh on gangway. Dimensions are 36 feet x 20 inches.

Remove old and install two new 4 x 8 sheets of non-skid mesh on Float 'B'.

Ladder to be installed as noted above.

Cleaning and painting of railings on approach and gangway.

To monitor

Gangway deck boards are beginning to rot, and should be replaced soon.

Floatation on Float 'A' measurements show this float is quite low on the west side.

Note:

Above work and procurement items are my suggestions only, and are to be authorized by CRD and/or SGI Harbours Commission.

End of inspection report.

Respectfully,

Alan w. Cannon.

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

MINERS BAY DOCK, MAYNE ISLAND – JULY 27, 2016

At this inspection I spoke with wharfinger, Richard Jarco, as to any concerns on this dock.

Approach

Approach is a 'drive-on' approach, but has a lockable post bollard for emergency vehicle access only. A metal grate is required here, at the entrance, to divert rainwater and debris from running onto the decking. See schedule 'A' for details.

Decking – all in useable and safe condition. Part of the decking on the approach was pressure washed earlier this year.

Railings – all in good condition, but has build-up of algae, and requires wire brushing, cleaning and painting. This work has been authorized, but the wharfinger has since stated he did not want to carry this work out, and due to CRD insurance requirements, I have not found a contractor to carry out this work. It is slated to be included in the upcoming tender documents.

Wharfhead

This wharfhead is a 'walk-on' only, and is barricaded from vehicle traffic.

Decking – a substantial number of deck-boards show rot, severe cracking and holes. Holes have been temporarily covered with plywood, to prevent accidents. This work is slated to be included in the upcoming tender documents.

Lineal feet requiring replacement: 360 lineal feet. Recently some timbers have been replaced, but with untreated fir. These timbers should be pre- treated to DFO/Transport Canada specifications.

None of the wharfhead decking has been pressure washed and requires this as soon as possible. Numerous greasy patches and algae. The oil spill kid on the wharfhead has been cleaned, and the rusted lock replaced with a plastic tie wrap.

Railings – all in good condition but as in the approach railings, these require cleaning and painting.

Gangways

Gangway 'A'

This gangway leads to float 'A' on the south side of approach. The roller and bearings on this gangway have recently been replaced by Island Marine Construction. There is no transition plate/apron on this gangway, and does not require one, as the adjacent pile well timbers would interfere with it.

Gangway 'B'

This gangway leads to float 'B'. New metal non-skid mesh along its length has recently been installed.

One roller bearing is now broken, so both should be replaced. I have recently replaced the gangway bed and associated metal 'L' guides with new material.

We are still having problems with this gangway, as the metal apron at bottom is riding up on the roller guides at times. I have ascertained that the whole float is moving in a north=south direction, up to six feet at times, which is causing the above problem. I have had to replace the apron with one that was slated to go to Port Browning. This apron was damaged to the point of being a safety hazard. Mike Smart is currently repairing this one, and then it will go to Port Browning. Also, as a consequence to the floats swinging, from tide changes and ferry wake, the roller comes off from inside the guides on average about once a week, and requires jacking to replace it.

Float 'A'

This float is on the south side of the approach, and is accessed via gangway 'A' from the wharfhead. This float is anchored via four sets of piles at each corner, via interior pile wells.

Decking - all decking and associated timbers appear in good condition, but requires pressure washing, including guard rails. With the warmer dryer weather, the decking is not so slippery, but some cleaning is still required. Approximately 12 deck boards require re-nailing or screwing.

Floatation – one floatation billet is breaking up at the north-west corner, but float does not show signs of sinking here. The billets are of the older styrofoam construction.

Float freeboard measurements – from each corner are: (similar to my inspection of May, 2016)

NE – 17 inches SE – 17 inches NW – 18 inches SW – 19 inches

Piles and wells – All four pile wells on this float have recently been repaired by Island Marine Construction, with new shock absorbing timbers and rubber. This was to alleviate the float's heavy banging into the piles from ferry wake.

Float 'B'

This float is on north side of approach and the first of three floats accessed from gangway 'B'.

Decking – all decking and associated timbers appear in good condition. This decking was pressure washed earlier this year, except for a portion at the south end.

The sliding metal transition plate between Floats 'B' and 'C' was recently replaced with a new aluminum unit. Also, two chains joining Floats 'B' and 'C' have recently been replaced by Island Marine.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner, and are: (similar to my inspection of May, 2016)

NE– 14 inches NW – 12 inches SE – 14 inches SW – 15.5 inches

Float 'C'

This float is attached to float 'B' - end to end, via chains and a sliding metal apron.

Decking – all decking and associated timbers appear in good condition.

One chain anchoring this float to Float 'D' was recently replaced by Island Marine.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements – from each corner are: (similar to my inspection of May, 2016)

NE – 20 inches NW – 17 inches SE – 17 inches SW – 17 inches

Float 'D'

This float is attached in a 'T' configuration to float 'C' via chains and plates with rubber tires in between each float.

Decking – all decking and associate timbers appear in good condition. This float is used by float planes and has two 4 x 8 non-skid metal sheeting. The yellow loading only area requires re-painting.

Floatation – all floatation boxes appear in good condition.

Measurements are taken from water height to top of stringer timber at each corner, and are: (similar to my inspection of May, 2016)

NE – 17 inches NW – 16 inches SE – 18 inches SW – 16 inches

Safety and Signage

Ladders – ladders are located on float 'D' and at south end of wharfhead. These ladders appear in good condition and could be readily accessed from the water. I would suggest additional ladders – one on float 'A' and one on the east side of float 'B' or 'C'

Fire extinguishers – one is located on wharfhead near gangway leading to the three floats on north side. This fire extinguisher was serviced in April, 2016.

A new fire extinguisher has been added to float 'A', A collar and clear panel were missing, and were recently replaced.

Life rings/heaving lines –float 'C' has a life ring and heaving line. Float 'A' requires a hanger only for an existing life ring and heaving line.

Lighting – there is overhead lights along the length of the approach, and a light on each of floats 'B' and 'A'.

Signage – all signage appears to be clean, well mounted and readable. I recently added new and updated moorage information notices on the Notice Board. The loading zone area requires new yellow paint.

Float Anchor Chains

Recently a main anchoring chain, leading from Float 'D' out into Active Pass, dragged its anchor, and Island Marine was called in to repair this. There remains a problem with the float anchoring chains, as I stated above under Gangway 'B'. The north floats are constantly moving in a north-south direction, up to 6 feet or more. This movement is parallel to the gangway, causing the metal apron to ride up onto the roller guides, which causes damage to the apron.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Richard Jarco. Also items of concern by wharfinger. The repair items are contained in the following 'schedule' 'A'

SCHEDULE 'A'

MINERS BAY DOCK, MAYNE ISLAND

REPAIRS REQUIRED AS OF INSPECTION OF JULY 27, 2016

Items requiring outside contractor

Bearings on Gangway 'B' require replacement.

Anchoring chains attached to the three north floats require adjustments, as I have stated above, under Gangway 'B', and also above under 'Float Anchor Chains'.

Wharfead decking replacement with pressure treating to DFO specifications. (360 feet) size of decking lumber: 4 x 11.5 inches. This work is slated to be included in the upcoming tender documents.

Pressure washing of wharfhead and float 'A'.

Metal grating to supply and install at entrance to approach. Measurements are 10 feet 5 inches in length. Deck board is 11 ½ inches x 3 ½ inches thick.

All railings, including bull rails on approach and wharfhead require cleaning and painting. I understand this work is included in the upcoming tender documents.

Items to be carried out by Al Cannon or wharfinger, Richard Jarco

Several deck boards require re-nailing on Float 'A'. All boards to be checked.

Hanger to acquire and install for life ring on float 'A'.

Additional ladders as itemized above.

Re-painting of yellow 'loading zone only' area on float 'D'.

Acquire and install two composite strips for under gangway 'B' apron – to prevent further wear on deckboards. Dimensions are approx. 5 inches x 3 feet x ½ inch thick. (2) I have acquired these items, but they should not be installed until the gangway apron problems are resolved. See item under 'Gangway 'B' above.

Wharfinger, Richard Jarco items

Nil

Note:

Above work and procurement items are my suggestion only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w Cannon

Dock Operations Coordinator

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

HOPE BAY DOCK – JULY 20 , 2016

At this inspection I met with wharfinger, Peter Binner, and went over his concerns.

Approach

Approach is a 'drive-on' approach, and now has a lockable bollard to block vehicles. A new metal grate should be installed across entrance to approach, to eliminate water and debris from running onto decking. See 'schedule A' for details.

Decking – approx. 15 boards show early stages of rot, and should be monitored for future replacement.

Railings and guard rails – all in good condition, but require cleaning and painting.

Wharfhead

This wharfhead is a 'walk-on' only due to barricade on approach.

The notice board is located on the wharfhead near top of gangway.

Two overhead lights are located here at top of gangway.

A large loading crane is located on this wharfhead, and requires the bottom bearing to be repaired, as it will not swing either way. This requires a contractor, probably with a crane.

Decking – a few boards show early signs of rot, and as with approach should be monitored for future replacement.

Railings and guard rails - all in good condition, but, as with the approach railings, require cleaning and painting.

Gangway

Gangway is clean with good paint. Treads and decking are in good condition. There is no non-skid wire mesh over the decking and this material has been recently ordered. There is a metal transition plate/apron attached to the gangway bottom. The roller bearings on the roller have recently been replaced.

Float 'A'

This float is the first of three floats at this dock. It is anchored on the west end under the gangway via two exterior sets of piles, with three piles in each well. Both wells have composite rub strips in good condition. The east end of this float is attached, end to end, to float 'B' via chains and a heavy rubber mat apron over the joint.

Decking – most in good condition. Associated mooring rails in good condition. Existing rub boards in good condition.

Floatation – all floatation boxes appear to be in good condition, and appear to be all fairly new black plastic encapsulated.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner, and are: (similar to the May, 2016 inspection)

NW – 18 inches SW –18 inches NE – 17 inches SE – 17 inches

Float ‘B’

This float is attached to float ‘A’ – end to end, via chains and a heavy rubber mat apron.

It is anchored in place via four sets of interior piles and wells with three piles in each well. All pile well composite rub strips are in good condition, with no wear visible.

Decking – all decking and associated timbers are showing signs of age, but appear in good condition. Similar for all associated timbers, including mooring timbers and rub boards. Decking is showing some signs of algae and slippery conditions, but as the weather is warmer and dryer, this to be monitored.

Floatation – all floatation boxes appear to be in good condition, and appear to be all fairly new black plastic encapsulated.

Float freeboard measurements – from each corner are: (similar to my May inspection)

NW – 18 inches SW – 19 inches NE – 17 inches SE – 17 inches

Float ‘C’

This float is attached in a ‘T’ configuration to float ‘A’ via chains and plates with rubber tires in between each float. One chain is showing wear, is very rusty, and requires replacement.

The joint between Floats ‘A’ and ‘C’ requires one new tire.

Float is anchored in place via four interior pile wells, with three piles in each well. All pile well composite rub strips are in good condition with no wear visible.

Decking – all decking and associate timbers, including mooring timbers and rub boards are in good condition, and as in Float ‘B’ some algae, and should be monitored.

Floatation – all floatation boxes appear in good condition.

Float freeboard measurements – from each corner are: (same as my May inspection)

NW – 20 inches NE – 18 inches SE – 18 inches SW – 19 inches

Safety and Signage

Ladders – one ladder only, and is located on the north-east side of float 'c'.

Fire extinguishers – one only, and is located on wharfhead on the notice board. Last serviced in November, 2015 no servicing required.

Life rings/heaving lines – one only, located on the side of the gangway.

Lighting – two overhead lights at top of gangway, on steel post. No lighting on floats.

Signage – two larger 'Hope Bay, SGIHC signs on wharfhead, one facing seaward, and one towards the wharfhead. Two loading zone signs on mooring timber at loading zone, with good yellow paint.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Peter Binner, and also wharfinger concerns. Also items to be monitored. The repair items are contained in the following 'schedule A'.

SCHEDULE 'A'

HOPE BAY DOCK, PENDER ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 20, 2016

Items requiring outside contractor

A new metal grate to be acquired and installed at the beginning of the approach. These are presently installed, in the place of the first deck board, at the Port Washington and Port Browning docks. They prevent build-up of dirt and rocks on the subsequent deck boards at this point. Width of deck at this location is: 11 feet, 3 inches. Deck board width is 11 to 11.5 inches. This work is included in the upcoming tender documents.

Crane bottom bearing to be repaired or replaced. Requested by wharfinger. This would require the use of a contractor's crane, to lift the unit for repairs. I believe this work is included in the upcoming tender documents.

Items to be carried out by Al Cannon or Wharfinger

Non-skid wire mesh to be installed on gangway. Approx. 36 feet at 20 inches wide. This material has been recently ordered.

Approach and Wharfhead railings require cleaning and painting.

Install one new tire in joint between Floats 'A' and 'C'.

Also one chain anchoring Float 'A' to Float 'C' requires replacement, as one link is quite worn. I have ordered this chain, and will be replaced in August.

Wharfinger concerns as at this inspection

Wharfhead crane bottom bearing to be repaired or replaced.

New ladders to be acquired and installed. This to be done when appropriate design is confirmed, and subsequently supplied.

Items to monitor

Approx. 15 deck boards on approach and two on wharfhead showing early stages of rot.

Note:

Above work and procurement items are my suggestion only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w Cannon

Dock Operations Coordinator

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

PORT BROWNING DOCK – JULY 20, 2016

At this inspection I did not meet with wharfinger, Claude Kennedy, but spoke with him, re any concerns at this dock.

Approach

Approach is a long 'walk-on' approach. At mid-point in this approach there is a boat grid, for customers' maintenance items. There is a charge for this, and there are adequate notices relating to this.

Decking – in good condition. But some decking requires pressure washing. It may be a problem with this, as it would be difficult to obtain water here,

Railings and guard rails – all in good and safe condition, but require scraping and painting.

Wharfhead

This small wharfhead at head of gangway holds the notice board, which is showing some rot, fire extinguisher, life ring and heaving line. Also, there is a large 'Port Browning SGIHC' metal sign, facing seaward. New updated moorage rate notices have been recently added to the Notice Board.

Decking – in good condition

Railings and guard rails - all in good condition.

Gangway

Gangway is clean with good paint. Treads and decking are in good condition. I have recently installed non-skid wire mesh on this gangway.

I have currently replaced one roller bearing, and will complete this on my next visit.

Float 'A'

This float is the first of three floats at this dock. It is anchored by pilings at the north end, under the gangway, and by chains at the south end. Piles are in exterior wells at far north end of float. The wells require three small strips of composite rub strips.

Decking – show in fairly good condition, but there is serious cupping in the warmer weather, and I have recently re-nailed loose deck boards. Related guard rails and rub boards are in good condition.

Floatation – all floatation boxes appear to be in good condition, and appear to be made up of some older fiberglass or Styrofoam and some newer black plastic encapsulated boxes.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner. These measurements are virtually the same as my May, 2016 inspection. They are:

NE – 15 inches NW –12 inches SE – 15 inches SW – 17 inches

Midpoint measurements are:

East side – 16 inches West side – 18 inches

Float ‘B’

This float is attached to float ‘A’ via chains with no spacing in between the two This float houses the search and rescue building, and also their pontoon mounted rigid hull rescue launch. The float is anchored via two sets of piles – interior wells at the west end, and also interior wells at the east end. All composite rub strips are in good condition. The whole float is fairly new, and well-constructed.

Decking – all decking and associated timbers are in ‘as new’ condition. Including guard rails and rub boards.

Floatation – all floatation boxes appear to be in good condition, and appear to be all fairly new black plastic encapsulated.

Float freeboard measurements – from each corner are: (same as inspection of May, 2016)

NE – 14 inches SE – 14 inches NW – 15 inches SW – 16 inches

Float ‘C’

This float is attached to the east end of float ‘B’ to form an ‘l’ configuration. This is an older float and all timbers show signs of wear. It is anchored to ‘B’ via chains, with no spacing in between. The adjacent deck board on float ‘B’ is loose, requires re-attachment, and is due to the different movement at the join of the two floats. Some remedial work is required here.

This float is anchored at its south end via two sets of interior pile wells, and all composite rub strips are in good condition. .

Decking – all decking and associated timbers, including guard rails and rub boards are in poor condition, all are showing signs of age, and could get quite slippery in certain conditions. This float is due for complete re-decking and rails. Float measurement is 85 feet x 8 feet.

Float freeboard measurements – from each corner are: (same as my May, 2016 inspection)

SE – 9.5 inches SW – 11 inches NE – 12 inches NW – 16 inches

Safety and Signage

Ladders – one ladder is located at the south end of float 'A' and one at the north end of float 'C'.

Fire extinguishers – one only, and is located on wharfhead on the notice board. This fire extinguisher was serviced in May, 2016

Life rings/heaving lines – one only, located on the notice board.

Lighting – there is no power to this dock, and there are four sets of solar powered lights – two over float 'B' on the overhead pile cross members, one set over the gangway and one set at the entrance to the approach. All appear quite new, and good working condition.

Signage – one large 'Port Browning SGIHC' sign facing seaward on wharfhead. Also one metal sign near roadway, showing 'Port Browning dock, SGIHC'. Good signage on notice board, including use of boaters' grid.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor, those items that could be repaired by either myself or the wharfinger, Claude Kennedy. And also the wharfinger concerns. The repair items are included in the following 'schedule A

Note:

Above work and procurement items are my suggestion only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w Cannon

Dock Operations Coordinator

SCHEDULE 'A'

PORT BROWNING DOCK, PENDER ISLAND

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 20, 2016

Items requiring outside contractor

Approach decking and guard rails require cleaning and painting.

Float 'C' requires replacement of all decking, guard and rub rails.

Floatation Boxes at south end of Float 'C' are inadequate, as this end is quite low, especially the SE corner.

Items to be carried out by Al Cannon or wharfinger

Metal mesh apron with white plastic slider to be installed on bottom of gangway. Mike Smart currently is repairing one from Miners Bay, to be installed at Port Browning when he has completed this. A welded on bracket to hold same is required, as well. I require a welder prior to installing this.

Joint at floats 'B' and 'C' require remedial work, as one deck board is lifting, due to irregular movement between these two floats. Existing deck board to be ripped to width, and HD plastic rub strip installed. Approx 6 inches x 8 feet and a new 2 x 12 timber, at 95 x 9 1/2 inches.

Wharfinger concerns as at this inspection

Decking on float 'A' tends to cup during warmer weather, and potentially cause people to trip on it. I have recently re-nailed loose deck boards on this float.

Items to monitor

Nil

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

PORT WASHINGTON DOCK – JULY 20, 2016

At this inspection I did speak with Wharfinger, Rod Mclean, and went over any concerns of his.

Approach

Approach is a 'drive-on' approach, but has two bollards which were recently installed, to prevent unauthorized vehicles. There is a metal grate at entrance to this approach, to deflect mud and rocks from forming on decking.

Decking – in newer condition, including related railings and guard rails. Very good condition.

Wharfhead

This large wharfhead is a 'walk-on' only due to the bollards.

The notice board is located on the wharfhead near top of gangway. I have cleaned the notice board and installed new updated moorage information notices.

One fire extinguisher is located on the notice board. This was serviced in March, 2016

Decking – some decking has been replaced, and are a little higher than the original boards. Some possibility here of tripping. To monitor this. Otherwise the decking is all in good condition.

Railings and guard rails – all in good condition, and appear to be newer.

Gangways

There are two gangways leading from the wharfhead. One leading to two eastern floats, and one leading to the long, western pointing float. I have recently installed new metal non-skid mesh on the western gangway. Both gangways have sliding metal transition plate/apron at bottoms.

The rollers, bearings and metal aprons with sliders on both gangways are in good condition.

Both gangway railings require cleaning, wire brushing, and painting.

One metal track on eastern gangway requires replacing, as it is quite rusty, and decomposing. I now have this item and will replace it on my next visit.

Float 'A'

This float appears to have newer decking and associated timbers. It is accessed from the western gangway. It is anchored at its eastern end via two sets of exterior piles, with four piles in each well. Piles all appear to be newer. All composite rub strips are in good condition. It is anchored at its western end via anchoring chains.

This float has a newer light and a life ring and line, on the light stand.

Decking – all in good condition, including guard rails and rub boards. All appear to be newer.

Floatation – all floatation boxes appear to be in good condition, and appear to be all fairly new black plastic encapsulated.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner, and are: (similar to inspection of May, 2016)

NW – 15 inches SW – 15 inches NE – 15 inches SE – 14 inches

Float 'B'

Is accessed from the eastern gangway, and is older, but in generally good condition.

It is anchored in place via three sets of piles – one exterior well on each side at its western end, and two interior wells – one near the midpoint and one near the eastern end of this float. All well composite rub strips are in good condition.

This float houses a light and the life ring and heaving line, on a light post.

Decking – all decking and associated timbers are showing signs of age, but appear in good condition. Similar for all associated timbers, including mooring timbers and rub boards.

Floatation – all floatation boxes appear to be in good condition, and appear to be all black plastic encapsulated.

Float freeboard measurements – from each corner are: (similar to inspection of May, 2016)

NW – 15.5 inches SW – 16 inches NE – 16 inches SE – 18 inches

Float 'C'

Is anchored to float 'B' end to end via chains and rubber tires in between. This joint shows considerable wear and should be monitored

It is anchored in place at its eastern end via anchoring chains.

Decking – all decking and associate timbers, including mooring timbers and rub boards are in good condition.

Floatation – all floatation boxes appear in good condition, and appear to be fiberglass boxes.

Float freeboard measurements – from each corner are: (same as my inspection of May, 2016)

NW – 20 inches

SW – 20 inches

NE – 18 inches

SE – 18 inches

Safety and Signage

Ladders – there is one ladder on the west end of float 'A', and one on the eastern end of float 'C'.

Fire extinguishers – one only, and is located on wharfhead on the notice board. This was serviced in May, 2016

Life rings/heaving lines – two sets – one on float 'A' and one on float 'B'.

Lighting – good newer lighting – at entrance to approach, one on the wharfhead, one each on floats 'A' and 'B', and over each gangway. Newer cabling to the lights over each gangway.

Signage – a large metal 'Port Washington, 'SGIHC' sign facing seaward on the wharfhead. No loading zone signage, but yellow paint is newer and shows well. Signage on notice board has been updated.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Rod Mclean, and also wharfinger concerns. The repair items are contained in the following 'schedule A'.

SCHEDULE 'A'

PORT WASHINGTON DOCK, PENDER ISLAND

REPAIRS REQUIRED AS OF INSPECTION ON JULY 20, 2016

Items requiring outside contractor

No items at this time.

Items to be carried out by Al Cannon or wharfinger

Both gangways require cleaning and painting.

One 'L' shaped steel gangway track requires replacement. Measurements are: 69 inches x 3 inches x 2 inches. I have this material and will replace it during my next visit here.

Wharfinger concerns as at this inspection

Items to monitor

Joint between floats 'B' and 'C'. Some wear is showing, due to irregular movement from wave action.

Anchoring chains off the float 'C', the far eastern float should be monitored, as this float has been swinging shoreward at times, according to Wharfinger, Rod McLean.

Note:

Above work and procurement items are my suggestion only. To be authorized by CRD and/or SGI Harbours Commission.

Respectfully,

Alan w Cannon

Dock Operations Coordinator

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

PIERS ISLAND DOCK, JULY 15, 2016

At this inspection I met with the wharfinger, Mike Smart, and went over any concerns he has with Piers island dock.

Approach

This approach is a 'walk-on approach only. It is of all wood construction. The decking and railings are non-painted, and are of all pressure treated material.

Decking – had one bad timber and this was recently replaced by Mike Smart. All other decking is in good condition.

Railings – boards, are all pressure treated and are in good condition.

Wharfhead

There is no wharfhead, as the approach leads directly to the gangway.

Gangway

This gangway is all steel, and is hung via chains and shackles at the top, and large steel wheels instead of the traditional roller and bearings at the bottom.

In good condition including non-skid wire mesh and treads. Gangway wheels and bed appear in good condition. There is a metal mesh apron on this gangway, and is operating satisfactorily. Metal mesh at base of gangway has some growth and grass imbedded in and around it, and requires pressure washing. Mike Smart has given a quotation on this, but has not yet been completed.

Floats

This dock is made up of three similar floats, configured in a triangle. Float 'A' is to the east of the gangway, float 'B' is opposite the gangway, and joined to one end of float 'A' and float 'C'. Float 'C' is to the west of the gangway.

Float 'A'

Decking – requires pressure washing, as stated above, and/or wire brushing near base of gangway, as a build-up of grass and dirt are visible. Decking has continuous two-foot wide non-skid metal mesh around perimeter on all three floats. This provides good footing and traction and is a substantial benefit.

All other decking and mooring timbers are in worn, but fairly good condition. One rub board in the inside of this float, at the pilings is worn, and requires replacing and a composite rub board installed.

Floatation – all floatation boxes are constructed of the old Styrofoam, without a covering and appear to be slowly disintegrating. There is an amount of Styrofoam chips visible floating in the waters inside the triangle of the three floats.

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water height to top of stringer timber at each corner. Those were: (similar to my May, 2016 inspection.

NE – 11 inches NW – 12 inches SE – 13 inches SW – 13 inches

Float ‘B’

This float is across the top of the triangle, and holds the notice board and loading/emergency zone. The notice board is of all aluminum, and is clean and very good condition.

Decking – all decking boards and associated timbers, including rub boards are in good condition.

Floatation – all floatation boxes are similar to float ‘A’. All Styrofoam, and slowly disintegrating.

Float freeboard measurements – from each corner are: (similar to my May, 2016 inspection)

NE – 13 inches SE – 12 inches NW – 13 inches SW – 13 inches

Piles and wells – the three floats are anchored with two sets of piles, with four piles in each set, and are located at two corners on the inside of the triangle. They are protected from shafe with composite rub boards, except for one. This board should be replaced with a composite board.

Float ‘C’

Decking – all decking and associated timbers, including rub rails appear in good condition. A few boards are a little loose, and some nails require either replacing in some boards or re-nailed.

Floatation – all floatation boxes are similar to float ‘A’. All Styrofoam, and slowly disintegrating.

Float freeboard measurements – from each corner are: similar to my May, 2016 inspection)

NE – 12 inches NW – 10 inches SE – 13 inches SW – 13 inches

The lowness at the NW corner is mostly attributable to the weight of the gangway here.

Safety and Signage

Ladders – one ladder was located at the south-east corner of the triangle, on the outside of the float.

Fire extinguishers – there is one fire extinguisher, located at the notice board. Last service date is March, 2016.

Life rings/heaving lines – these are located on the notice board and are in good condition.

Signage – all appear in good and readable condition. Emergency/loading zone area on float 'B' is well painted in yellow. This loading zone has no signs indicating this, just the yellow paint. Cautionary signs warning of slippery conditions are at the top of the gangway, and in good readable conditions.

CRD notices, such as payment schedules and moorage rates now have been replaced with larger ones that are more readable.

Lighting – there is no power to this dock, subsequently no lights.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Mike Smart. Also items to be monitored. All repair items are contained in the following Schedule 'A'.

Note:

Above work and procurement items are my suggestions only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w. Cannon

Dock Operations Coordinator

SCHEDULE 'A'

PIERS ISLAND DOCK

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 15, 2016.

Items requiring outside contractor

No items at this time.

Items to be carried out by Al Cannon or wharfinger, Mike Smart

Decking near base of gangway requires pressure washing and/or wire brushing. Mike has given a quote for this work, and has been given approval to proceed.

Additional composite rub board is required at piles at the interior of the junction of floats 'A' and 'B'. The existing 2 x 10 to be partially removed. Measurements are:

Composite board – 1 x 6 inches x 5 feet. Lumber – one wood 2 x 4 inches x 5 feet. I have requested Mike has quoted on this, and been given approval to proceed, but is not yet completed.

Items to be monitored

The Styrofoam floatation boxes should be monitored, month to month, and will require replacing in the future.

SOUTHERN GULF ISLANDS HARBOURS SERVICE DOCK OPERATIOONS COORDINATOR

INSPECTION REPORT FOR MONTH OF JULY, 2016

SWARTZ BAY DOCK, VANCOUVER ISLAND – JULY 15, 2016

At this inspection I met with the wharfinger, Mike Smart, and went over any concerns of his.

Approach

This approach is a 'walk-on' approach only. The deck is constructed of concrete, with all metal railings. The all-aluminum notice board is located on the approach, adjacent to the top end of the gangway. This notice board is very well constructed, and is in very good and clean condition.

Decking – all concrete and appears in good useable and safe condition.

Railings – are all metal, mostly in good condition, except for some new railings and/or welding required at the entrance. This work is currently included in the upcoming tender documents, slated for repairs this fall.

Wharfhead

There is no wharfhead, as the approach leads directly to the gangway.

Gangway

In good condition including non-skid wire mesh and treads. Gangway roller and bed appear in good condition. There is a metal mesh apron on this gangway, and is operating satisfactorily. One metal 'L' roller guide requires re-attachment. The two roller bearings require replacement. Mike Smart has quoted on these two items and has approval for these repairs.

Float 'A'

This is the first of two floats here, and is anchored to float 'B' end to end, at a slight angle, via chains with rubber tires and a metal apron in between the two floats. The two chains require replacement, as they are wearing thin. This item is included in the upcoming tender documents.

There are no pilings at this dock, as it is anchored via chains and concrete blocks.

Decking – requires pressure washing, including guard rails. This should be carried out before winter. Otherwise all decking timbers are in good condition. Mike has recently re-nailed some deck boards on this float.

Floatation – all floatation boxes appear in good condition

Float freeboard measurements were taken and recorded at each corner and will be checked at each inspection for any substantial change.

Measurements are taken from water level to top of stringer timber at each corner, and are: (same as my May inspection.)

SE – 16 inches

SW – 16 inches

NE –14 inches

NW – 14 inches

Float 'B'

As stated above, this float is anchored with chains, end to end with float 'A'.

The north side of this float is reserved for loading and emergency vessels. The yellow paint should be upgraded with new paint.

Decking – all decking and associated timbers, including rub boards, appear in good condition.

Floataction – all floataction boxes appear in good condition.

Measurements are taken from water level to top of stringer timber at each corner, and are: (same as my May inspection.)

SE – 16 inches

SW – 13 inches

NE –14 inches

NW – 13 inches

Safety and Signage

Ladders – there is one ladder at the extreme north end of float 'B'

Fire extinguishers – one is located on the notice board, and was last serviced in April, 2016.

Life rings/heaving lines – the notice board has a life ring and heaving line in good condition.

Signage – there is a faded, wooden 'Swartz Bay' overhead sign near the top of the gangway. This sign could stand new lettering. We have recently added new, and larger moorage rate signage. Other safety signs appear in good and readable condition. The loading zone has two signs at this area of float 'B'.

Lights – there are four lights along the approach, and it was not determined if these are operational.

Summary

Items requiring attention and/or repair are divided into those requiring an outside contractor and those items that could be repaired by either myself or the wharfinger, Mike Smart. Also any items that require monitoring. The repair items are included in the following Schedule 'A'.

SCHEDULE 'A'

SWARTZ BAY DOCK, SWARTZ BAY

REPAIRS REQUIRED AS OF INSPECTION REPORT ON JULY 15, 2016

Items requiring outside contractor

No items required at this time

Items to be carried out by Al Cannon or wharfinger, Mike Smart.

Refasten metal 'L' guide under gangway roller, and remove debris from under gangway. Mike Smart has been approved to do this.

Pressure wash Float 'A' decking and guard rails. Mike Smartt has been approved for this.

Replace gangway roller bearings. Mike Smart has been approved.

Replace two chains joining Float 'A' to Float 'B'. Approx. 3 links in each, plus new shackles. This item is included in the upcoming tender documents.

Re-painting loading zone. Mike Smart will carry this out. Al to supply yellow paint.

Items to be monitored

No items at this inspection.

Note:

Above work and procurement items are my suggestions only. To be authorized by CRD and/or SGI Harbours Commission.

End of inspection report

Respectfully,

Alan w. Cannon

Dock Operations Coordinator